

Spring 2007 Volume 9 Issue 2 The University of North Carolina at Chapel Hill Department of Otolaryngology/Head and Neck Surgery

Hgads Up

A newsletter for alumni, colleagues, and friends of the Department

Our Son Has Two Cochlear Implants! A Mom's Perspective

by Holly Shoun

Five-year-old Parker Shoun has not one but two cochlear implants. He received his first on the right ear in 2004, and most recently in April of 2007 on the left. His mother relates what the experience has meant for the family.

Learning that Parker was deaf was devastating news for our family. We were fortunate to have access to one of the top cochlear implant centers in the world right here in North Carolina, The UNC Hospitals Pediatric Cochlear Implant Team. They are polished professionals that include gifted surgeons, talented audiologists, nurturing teachers and dedicated speech therapists. Cochlear implants are a big commitment; they are not a quick fix for deafness. Even the most well executed cochlear implant surgery does not guarantee magnificent hearing abilities and beautiful speech quality. Implant recipients have to learn to use their CI device and keep it well maintained. The CI Team has worked extensively with Parker to help him learn listening skills, speech and language. They have given us a top-notch foundation on which to build and with that a renewed sense of hope for our son's future. Now our cochlear implant lifestyle feels like home.

We would have never chosen for our child to need a cochlear implant to hear, but in many ways I am glad my family has had the opportunity to experience the cochlear implant process. We have met profession-



A week after cochlear implantation on his left ear, Parker and his mother, Holly Shoun, return to the ENT clinic at Carolina Pointe for a postop checkup by Dr. Pillsbury. Everything looks great, and Parker is doing great! He is a student in the CASTLE program.

als and friends through this experience that have truly impacted and enriched our lives. Cochlear implants have made my family smarter and stronger and braver. That's one miraculous piece of technology!

Right: It's "Turn-on Day" for Parker, the day his second cochlear implant is initially activated. Celebrating with him at the CCCDP are Jennifer Woodard (audiologist), Erin Thompson (speech therapist), and Deb Hatch (audiologist).



Chair's Corner

The recent completion of our CI 2007 meeting instilled in all of us a great pride for our department. We had almost 1200 attendees at the meeting, with almost 400 scientific presentations. It was widely held by all those who attended that this was one of the best conducted conferences of its type in all the years that the Cochlear Implant International Symposiums have been held. It was really wonderful to see so many people from UNC at the meeting, including nurses, audiologists, graduate students, residents, and research and attending staff. The American College of Surgeons did a wonderful job in managing the meeting for us, and the Westin Hotel was beautiful. We are really looking forward to doing this again in the future, perhaps hosting the Combined Adult and Pediatric meeting as soon as 2012. Congratulations to all of you who made this such a resounding success.

Harold C. Pillsbury, MD Department Chair



CCCDP/CASTLE staff gather at CI 2007: Lisa DiMaria, AuD; Deb Hatch, MS; Jennifer Woodard, MA; Hannah Eskridge, MSP; and Lillian Henderson, MSP



Live in concert, it's **P, Z, and the Residents Three!**Left to right: Drs. Harold Pillsbury, Carlton Zdanski, Allen Marshall, Carlos Ebert, and Marc Bassim entertain the crowd at CI 2007.

C12007: A Promise Fulfilled

by Rose P. Eapen, MD, and Emily Buss, PhD

The 11th International Conference on Cochlear Implants in Children (CI2007) took place April 11-14 in Charlotte. This year, UNC-Chapel Hill was the host organization, and our department took the lead role in planning and directing the conference, with organizational and administrative support provided by the American College of Surgeons. The conference was a resounding success, thanks in no small part to the department's great efforts. The goals of the meeting were to bring together participants from a range of disciplines including surgery, audiology, basic science, engineering, education and industry. Dr. Harold Pillsbury and Dr. Craig Buchman, course directors, provided the leadership and vision to meld these broad interests into a cohesive program. This strategic work was carried out with the help and support of the otolaryngology organizing committee, including Drs. Carlton Zdanski (UNC), Debra Tucci (Duke), John McElveen (Carolina Ear and Hearing), Trevor Goldberg (Charlotte Ear, Nose, and Throat) and Brad Brechtelsbauer (East Carolina University). Attendance at CI2007 surpassed expectation, and was truly international in flavor, with over one thousand registrants from all over the world participating. Having an international meeting so close to home provided a unique opportunity for students and residents here at UNC. Representatives from our residency program included Drs. Marc Bassim, Carlos Ebert, Allen Marshall, Deidra Blanks and Rose Eapen.

The first day of the meeting focused on Cochlear Implantation of the Very Young. The guest of honor for this session was Dr. Simon Parisier (New York University), who talked about the challenges faced by cochlear implant technology. Dr. Pat Roush's talk entitled "Early Assessment and Hearing Aid Fitting in Infants" considered some of the problems involved with assessing the hearing status of very young children. She emphasized the need for appropriate behavioral and objective testing, coupled with optimized amplifica-

tion, prior to cochlear implant surgery issues that are pertinent to the question of how early an infant should be implanted. That afternoon, Dr. Pillsbury presented data on cochlear implantation in patients with significant residual hearing preoperatively; results of this study showed considerable improvement in performance 3 years following implantation. Dr. Oliver Adunka presented cochlear microphonic data collected at various stages during a cochlear implant surgery in a child with auditory neuropathy. This provided novel insights into when cochlear function, as reflected in hair cell response, becomes compromised by the surgical invasion itself. Dr. Charlie Finley also presented a poster on the topic of how CT, behavioral and electrophysiological data might guide mapping to maximize usable hearing in cochlear implant patients.

The focus topic for the second day of the meeting was Auditory Nerve Assessment and Disorders. Dr. Margo Skinner (Washington University) contributed in absentia a very interesting overview of the challenges of cochlear implant fitting in young children, a presentation which was given by her colleague Dr. Jill Firszt (Washington University). Dr. Craig Buchman presented data demonstrating the need for MRI evaluation in addition to CT evaluation for children being referred for cochlear implantation to rule out cochlear nerve deficiency. CCCDP audiologist Jennifer Weinstock reported data showing that intracochlear evoked compound action potentials can be measured in pediatric cochlear implant patients who, preoperatively, had the audiological profile of auditory neuropathy, and that these potentials may be predictive of later speech performance. Dr. Carlton Zdanski discussed the medical and audiological profiles of children with auditory neuropathy, and presented cumulative data on outcomes of cochlear implantation in these children. Dr. Charlie Finley also presented his findings that functional hearing may be impaired by overly deep electrode insertion or insertion of the electrode into scala vestibuli. Dr. Doug Fitzpatrick presented some exciting behavioral and physiological data in rabbits using the experimental IC device. Medical student Jason Roberts (East Carolina University) presented electrophysiological and behavioral data on binaural processing of binaurally offset acoustic stimuli, and Dr. Deidra Blanks presented work on normal-hearing simulation of binaural cues available to bilaterally implanted listeners.

Overall this conference was a huge success and a great learning experience. It is inspirational to see how far the field of cochlear implantation has progressed over the past 20 years, and it is exciting to be part of such a vibrant community of clinicians and scientists.



Left to right: Jill Ritch, AuD (audiologist), Pat Roush, AuD (Director of Pediatric Audiology), Sarah Martinho, AuD (audiologist), Holly Teagle, AuD (CCCDP Clinic Director), and Corinne Macpherson, AuD (audiologist)

A New Frontier in Cochlear Implants: UNC Leads the Way in Clinical Trial Using the New MED-EL Electric-Acoustic System

by Oliver F. Adunka, MD



Chief Resident Adam Zanation, MD, and Craig Buchman, MD, prepare the patient for the first implantation of the MED-EL Electric-Acoustic System (EAS) in North America.

On April 4, 2007, Dr. Craig Buchman performed the first implantation of the MED-EL electric-acoustic system in North America. For this clinical trial, UNC has joined the ranks of 13 other centers across the US and Canada. The anticipated enrollment for this FDA regulated clinical trial has been set at 55 subjects. UNC has lead the enrollment process with 5 subjects to date with two of them who having already undergone surgery.

Subjects eligible for participation must be between the ages of 18 and 70 and have stable mild sloping to profound bilateral sensorineural hearing loss. Additionally, patients should have an extensive history of traditional amplification and hearing aid use. Patients most appropriate for this trial are most often those demonstrating a discrepancy between severely decreased speech understanding as compared to their relatively good pure-tone audiogram.

This new hearing system combines electric stimulation from a cochlear implant and acoustic stimulation via a conventional hearing aid. Both systems act synergistically in that the hearing aid amplifies the residual low frequency hearing, while the cochlear implant provides high frequency information. This stimulation pattern has been termed electric acoustic stimulation and has revealed robust outcomes for listening in noise as well as for music appreciation – conditions traditional cochlear implants have been less effective.

To provide adequate acoustic stimulation for effective EAS, preservation of residual hearing during the surgical implantation process is fundamental. Since certain factors determining the hearing preservation outcome remain speculative, maintenance of residual hearing during and after surgery provides the biggest challenge. Upcoming research at UNC will focus on some of these topics to determine audiological and surgical factors responsible for hearing loss.

Dr. Oliver Adunka, along with Drs. Pillsbury and Buchman, is a Co-Principal Investigator on this clinical trial.



The EAS device: For the first time, an external system that combines a cochlear implant and a hearing aid in one.

Grose Honored for Exceptional Teaching

by Sara Mamo, 3rd Year AuD Student

"He cares so much about both you and his subject that everyone wants to do well. He is someone you never want to let down."

All the quotes and stories collected by the University Committee on Teaching Awards during their selection process just scratch the surface of what Dr. Grose means to his students. My classmates and I were happy to have a chance to let Dr. Grose know how much we appreciate and respect him, and we congratulate him on being chosen one of four recipients of the 2007 Distinguished Teaching Award for Post-Baccalaureate Instruction.

Dr. Grose teaches three required courses for the Doctor of Audiology (Au.D.) program within the Division of Speech and Hearing Sciences. He teaches these courses after fulfilling a full day of responsibilities to his primary faculty appointment in the Department of Otolaryngology. Due to his dedication to learning, teaching, and the future of Audiology, he even carves out the time every year to participate in the interviews for applicants to the Au.D. program.

In addition to his normal commitments, for the past two semesters he has been supervising independent studies for a classmate and me. When I say supervising, I really mean, participating in independent studies with us. I am almost certain he has spent as much time on my project as I have. His time spent is driven by his intense interest in what he studies, but is equally motivated by his desire to share his interests with us.

When my classmates and I don't understand something, one of us will usually suggest asking Dr. Grose. I told him recently that due to my position as his graduate assistant, I seem to have become his official spokesperson. My teachers, clinical supervisors, and classmates always turn to me and ask if I could check with Dr. Grose to find answers to all sorts of random questions.

It's not just that he's fine with having students come by his office with questions; it's that he seems genuinely happy that you have dropped in. I can go by his office at any time with a question about any topic or article and he will stop what he's doing, go to the whiteboard, draw diagrams and explain it. I cannot count the times I have interrupted him and he has been happy to entertain and elucidate my confusion. I have gone so far (unfortunately this is true) as to phone him at home when struggling with a project. Not only did he not tell me never to bother him at home again, which would have been perfectly reasonable, he willingly walked me through using the equipment and invited me to call again when I came to the next step of the procedure.



Dr. Grose with the AuD students graduating in 2008. Seated: Adam Mehlenbacher, Dr. John Grose, Sara Mamo, Hailly Humphrey. Standing: Kara Conrad, Shana Jacobs.

In the process of helping students discover answers to their many questions, it is clear that he sincerely wants to make sure we understand, and he is always willing to spend that extra time with students to facilitate the learning process. I still remember test questions that I worked on for him and papers that I wrote. I remember these things because his exams and assignments challenged me. That seems an obvious goal for any professor, but it is rarely done so well.

I'd like to share one more quote that was collected during the nomination process because, to me, it perfectly describes why Dr. Grose is so appreciated by all who are lucky enough to know him well. One colleague shared with the committee that "John sees things through other people's eyes rather than his own. This ability gives him tremendous value as a teacher."

John H. Grose, PhD, is a Professor in the Department of Otolaryngology/Head and Neck Surgery. He began his career at UNC in 1987 as a Fellow/Trainee and became faculty in 1989. He has an adjunct appointment with the Division of Speech and Hearing Sciences. Currently he is the Principal Investigator on an NIH-funded project that examines complex sound processing in normal and impaired ears. His list of teaching responsibilities is extensive. He is Course Director of three required courses for the Doctor of Audiology (AuD) program, gives lectures to OHNS residents, mentors residents and AuD students in the lab, provides preceptorships to medical students, as well as supervises graduate students in Audiology and Biomedical Engineering undertaking a thesis project in the area of Audiology/ Psychoacoustics.

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Carolina Course Heads to Savannah

by Paul C. Bryson, MD, PGY4



Faculty and residents gather for dissection demonstration before starting work on their cadavers. Photo by Kathy Harris

The Eighth Annual Carolina Course in Sinus Surgery and Facial Plastic Surgery recently took place April 13-14, 2007 in Savannah, Georgia. Due to renovation of UNC's Berryhill Hall, Dr. Senior and Dr. Shockley changed locations with the assistance of Dr. Frederick Kuhn of the Georgia Sinus Institute. The course was fantastic as usual and this year's facilities were quite exceptional.

The course commenced on Friday, April 13th, as all participants met at Savannah's University Medical Center at 7:00 a.m. for a brief registration and a breakfast of hot coffee and fresh pastries. It was a pleasure to see some familiar faces, as well as meet residents from other programs, and faculty from other institutions.

At 7:30, Dr. Senior warmly welcomed all in attendance, after which he and Dr. Shockley discussed the schedule for the next two days. This year's sinus surgery/rhinology instructors included Dr. Brian Mathews (Wake Forest University), Dr. Frederick Kuhn (Georgia Nasal and Sinus Institute), and Dr. Chris Melroy (formerly of UNC and currently Dr. Kuhn's fellow).

The morning began with lectures on the medical management of sinus disease, sinus anatomy, basic endoscopic surgical techniques, and complication avoidance. This was followed by more advanced topics including frontal sinus surgery, sphenoid sinus surgery, CSF leak repair, as well as open approaches to the paranasal sinuses.

Cadaveric dissection and individual instruction from faculty members followed a quick lunch. Each station consisted of a fresh cadaver specimen and state-of-the-art equipment, complete with various angled endoscopes, monitors, entire instrument sets, and micro-debriders. Some stations were even equipped with image guidance systems. Company reps strolled through the various rooms to answer questions and troubleshoot problems. The entire afternoon was spent in the lab as the PGY-3's performed basic FESS, and PGY-5's honed their skills for life after residency. Individualized instruction from the faculty and the opportunity to have one's own dissection specimen were invaluable. A special component to this year's course was the presence of the Xoran portable CT scanner. Participants were asked to grade their dissection performance. We then had the opportunity to see a CT scan of our dissection, thus providing instant feedback for our efforts.

The day concluded with a pleasant dinner at The Crab Shack on Tybee Island complete with camaraderie, conversation, food and libations. After a laid back seafood dinner, the group returned to Savannah and hit the riverfront to sample some of the local night life.

Saturday commenced the facial plastic surgery component of the course. Dr. Shockley introduced our instructors, which included Dr. Shockley, Dr. Lynn Damitz (UNC Plastic Surgery), Dr. Raymond Cook (UNC, WakeMed ENT), Dr. Neil Goldman (Wake Forest University), Dr. Achih Chen (Medical College of Georgia), and Dr. Adam Zanation (UNC).

As before, the morning was filled with excellent lectures on several salient topics including management of frontal sinus fractures, fundamentals of rhinoplasty, upper and lower lid blepharoplasty, endoscopic brow lift, surgical rejuvenation of the midface, highlights of the deep plane facelift, adjunctive cosmetic procedures, and scar revision techniques. All lectures were outstanding.

After lunch, we again headed to the lab to apply what we had learned in the classroom. Under the tutelage of our instructors, we refined our techniques in rhinoplasty, blepharoplasty, face and brow lifting. Our instructors once again moved from station to station, individualizing their teaching, and maximizing our learning. After a great afternoon of mastering the beautification of our fellow man, we all went our separate ways feeling very satisfied and excited about what we had just experienced and learned.

The Eighth Annual Carolina Course was a resounding success with fantastic facilities. Both attendees and faculty alike were pleased with the content of the course as well as with the Savannah location. Kathy Harris did a wonderful job. I was impressed with the quality of lectures, the topics covered, and the hands-on approach to learning. Being able to participate in solo cadaveric dissections under the supervision of fellowship-trained surgeons in their respective fields is an invaluable experience. As a PGY-3 resident, I was able to cover a significant breadth and depth of surgical anatomy and technique that will serve me well as I become a senior resident in the coming months.

On behalf of the UNC residents, I wish to extend our deepest gratitude to Drs. Senior and Dr. Shockley and all instructors who volunteered their time to further our education. Special thanks go out to Kathy Harris for her organizational skills (and patience!). Thanks also go out to our corporate sponsors and supporters including BrainLAB, Stryker/Leibinger, Xoran, Sanofi Aventis, Medtronic, Karl Storz Endoscopy, and Gyrus ENT.



Dr. Paul Bryson refines his deep plane facelifting technique. Photo by Kathy Harris

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Announcements

Just a few of the many exciting things happening in our Department



Sherri Vernelson, BS, Teacher of the Deaf and Hard of Hearing

Sherri Vernelson, Teacher of the Deaf and Hard of Hearing for the CASTLE program in the Department of Otolaryngology/Head and Neck Surgery was awarded a full scholarship to pursue a master's degree in special education with an emphasis in deaf education. The John Tracy Clinic Teacher Education Program in partnership with the University of San Diego School of Leadership and Education Sciences created a two-year, web-based, distance learning program that allows teachers working in auditory-oral centers of excellence, such as CASTLE, to specialize in auditory-oral and auditory-verbal education. Sherri first began teaching deaf and hard of hearing children to develop spoken language in 1993 and joined the CASTLE staff in 2005. Sherri has been a wonderful addition to our staff with her high work ethic, upbeat personality, and dedication to the children and their families. She will graduate with her master's degree in May 2008.

Carolyn J. Brown, MS, CCC-SLP/A, was the recipient of the 2006 Daniel Ling award. Daniel Ling was an internationally known professional in the field of deaf education, due to his unprecedented work in the development of spoken language in deaf children. He presented and consulted all over the world for most of his career. He also authored many papers and books on this subject. This award in his honor is given by the North Carolina A.G. Bell organization to one professional each year to recognize his or her work in the field. Ms. Brown says that it was quite an honor to have been chosen for this award, since Dr. Ling had been such a big influence on her career. She has been the Program Director of the CCCDP since 1993 and is Clinical Assistant Professor in the Department of Otolaryngology/Head and Neck Surgery.

Dr. Brent Senior is already planning his tenth and eleventh trips to Vietnam with Resource Exchange International (REI), leading a team of otolaryngologists who go every year to teach Vietnamese otolaryngologists and perform surgeries with them. Dr. Senior and two UNC ENT residents, Drs. Jeff LaCour and Steve Lee, will spend a week in Hanoi beginning August 27, 2007. Another trip to both Hanoi and Ho Chi Mihn City is planned for February 25 to March 7, 2008. If you would like to participate, feel free to contact him at Brent_Senior@med.unc.edu.



Drs. Shores, Couch, and Pillsbury

Carol G. Shores, MD, PhD, and Marion E. Couch, MD, PhD, were recently recognized for excellence in teaching by being selected as members of the UNC School of Medicine's Academy of Educators. Established in January 2007, the Academy of Educators promotes and supports excellence in teaching and the work and career paths of excellent teachers. As Department Chair, Dr. Pillsbury nominated Shores and Couch. Fellows of the Academy of Educators are faculty who dedicate a significant portion of their career to medical student education with recognized expertise and leadership roles in teaching, curriculum development and education scholarship.

Comments, suggestions, or questions about *Heads Up*? Contact Elizabeth Perry, 919-966-8926, or eaperry@med.unc.edu.

Heads Up

The Department of Otolaryngology/Head and Neck Surgery is proud of its skilled faculty and staff who are committed to providing patients with the highest quality health care. Get to know us!

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