UM Scientific Co-Chairs Host 16th Symposium on Cochlear Implants in Children

Cochlear implants are changing the lives of children like Kennedy Patlan. Born in Dallas and raised in Miami, Patlan received a cochlear implant more than 20 years ago, and became the first deaf student to receive a Posse scholarship to attend Syracuse University. “I can’t thank the clinicians and researchers enough,” said Patlan, who is now working in social cause advertising in Washington, D.C. “Together, we are making great progress, one sound at a time.”
Dr. Fred Telischi speaking at the conference.

Patlan received a rousing ovation from more than 1,200 attendees at the 16th Symposium on Cochlear Implants in Children – Treating the Whole Child, held July 10-13 at the Diplomat Beach Resort in Hollywood, Florida. Two University of Miami Miller School of Medicine leaders served as scientific co-chairs for the conference, which was organized by the American Cochlear Implant (ACI) Alliance and supported by the UHealth Ear Institute and other academic and private sector organizations.
“Cochlear implants are opening doors by restoring hearing in patients like Kennedy Patlan,” said co-chair Fred Telischi, M.D., chair of otolaryngology, professor of otolaryngology, neurological surgery, and biomedical engineering, and the James R. Chandler Chair in Otolaryngology. “But we have to reach them early in life – ideally before the age of one.”

Referring to the conference’s Spanish and Chinese language tracks, Dr. Telischi added that more cochlear implant patients will be growing up in multilingual families. “The evidence clearly supports maintaining two languages for children with hearing loss,” he said.

Co-chair Ivette Cejas, Ph.D., associate professor of otolaryngology and psychology, and director of Family Support Services at the UHealth Children’s Hearing Program, emphasized the multidisciplinary aspects of the conference. “We need to look beyond the technology and consider the importance of speech therapy, psychological support, education and family engagement,” she said. “I encourage every attendee to push beyond your comfort zone and take advantage of the cross-training opportunities at this symposium.”

**Current Trends**

At the opening session, Colin Driscoll, M.D., chair of the ACI Alliance, welcomed attendees and pointed to several trends in health care that will affect clinical services for children with hearing loss. “We can expect a higher percentage of virtual clinic visits as telemedicine expands,” he said. “Consumerism is another trend. Patients and families want an accurate diagnosis the first time around and clarity on their treatment options.”
Dr. Driscoll added that advances in technology, such as artificial intelligence and machine learning, can help clinicians develop treatment plans for their patients. “We also need to help solve the problem of rising health care costs, and find new ways to deliver care,” he said.

Donna Sorkin, executive director of the ACI Alliance, noted that about 1.2 million Americans have severe to profound hearing loss. However, only about 100,000 patients have received cochlear implants. “This technology is underutilized, and we need to expand awareness,” she said. Sorkin also presented the “Lifetime Achievement Award for Service to Families and Professionals” to Karl White, Ph.D., director of the National Center for Hearing Assessment and Management at Utah State University.

Music can strengthen sound processing in the brain, according to Nina Kraus, Ph.D., professor and chair of the Department of Communication Sciences and Disorders at Northwestern University. “The rhythms, frequency and harmonics in music can affect the brain in predictable ways,” she said in the John Niparko Memorial Lecture, “Sound Processing in Healthy and Hurting Brains: What Have We Learned from Music and Concussion?”

In contrast, concussions make it more difficult for people with hearing loss to perceive speech, she said. “We have discovered that tracking sound processing in the brain will identify 90 percent of people with concussions and clear 95 percent of those who have not had this brain injury.”

Faculty Presentations
Throughout the conference, University of Miami faculty members presented their clinical and research findings, while addressing other issues related to managing these complex cases.

Dr. Ivette Cejas addresses the symposium.

From a surgical perspective, Thomas Balkany, M.D., Hotchkiss Professor and chairman emeritus of the Department of Otolaryngology, discussed “Adaptive Cochleostomy and Cochlear Implant Electrode Insertion Vectors.” While research shows
that cochlear implants are superior to other treatments for hearing restoration, surgeons need to consider appropriate electrode insertion approaches based on the ear’s anatomy.

**Xue Liu, M.D., Ph.D.,** professor of clinical otolaryngology, human genetics, and pediatrics, and vice chair of research and director of the University of Miami Otogenetic Program, spoke on “Global Impact and Screening Strategy for Deafness Genes in CI Patients.” He noted that there are a handful of genes involved in patients with congenital hearing loss. “We have developed a highly sensitive, low-cost screening tool that one day may be able to help us customize treatment based on a particular mutation,” he said. “That will give us a great opportunity to improve outcomes for these patients.”

**Simon I. Angeli, M.D.,** professor of otolaryngology and neurosurgery and director of the UHealth Ear Institute, discussed “Disparities in Access to Cochlear Implant Surgery and Related Services.”

In his talk on “Improved Speech Perception and Expression in Implanted Individuals Having Dual Diagnosis of Hearing Loss and Autism Spectrum Disorder,” **Adrien Eshraghi, M.D., M.Sc.**, noted that children with hearing loss and Autism Spectrum Disorder benefit from cochlear implants. “We have developed a scoring system to evaluate how these children can understand words and express them,” he added.

Dr. Eshraghi, who is co-director of the UHealth Ear Institute and director of the University of Miami Hearing Research Laboratory, also gave a presentation on “Evaluating the Efficacy of New Otoprotective Drugs for Cochlear Implantation Trauma with or without Electrical Stimulation using In Vitro
and In Vivo Models.”

Meredith Holcomb, Au.D., assistant professor of otolaryngology and director of cochlear implants, gave three presentations: “Effects of Speech Processing Strategy on Cochlear Implant Performance,” “When to Replace Legacy Cochlear Implants for Technological Upgrades: Indications and Outcomes,” and “How Cochlear Implant Industry and Cochlear Implant Clinics Can Collaborate to Improve Clinical Efficiency.” Dr. Holcomb was also elected the new chair of the Board of Directors for the American Cochlear Implant Alliance. She is the first woman and first audiologist to serve in this role.

Other University of Miami presenters included:

- Suhrud Rajguru, Ph.D., associate professor of biomedical engineering and otolaryngology, who discussed “Therapeutic Hypothermia to Preserve Residual Hearing in Cochlear Implantation.”
- Sandra Prentiss, Ph.D., assistant professor of otolaryngology and leader of cochlear implant research, who presented “Clinical Application of Ecog Measurements” at the pre-conference symposium.
- Chrisanda M. Sanchez, Au.D., assistant professor of audiology in the Children’s Hearing Program, presented a case study on managing cochlear implantation in children with CHARGE syndrome, a cluster of genetic-related abnormalities.
- Sandra Velandia, Au.D., assistant professor of audiology and director of operations, presented “Managing Bilingual Cochlear Implant Candidates: An Audiological Perspective.”
Lynn Miskiel, M.A., CCC-SLP/A, LSLS, Cert AVEd, director of audiology services at the Debbie Institute on the University of Miami medical campus, discussed specialized listening and spoken language programs that promote development of language skills in young children with hearing loss.

Lynn Perry, Ph.D., assistant professor of psychology, spoke on “Peer Interaction and Language Development in an Intervention Classroom for Children with Hearing Loss.”

Several University of Miami students also participated. Nicole Lorenzo and Kathryn Marsh, two pediatric psychology interns, presented “Implementation of a Screener for Depression and Anxiety: Addressing the Mental Health Needs of Adolescents with Hearing Loss” and “Speech, Language, and Vocabulary Outcomes in Children with Dual Diagnosis: Hearing Loss and Autism.”

Music therapy student Jessica MacLean also won the student poster award in the rehabilitation/education section for her master’s thesis, “An Exploratory Study to Examine a Drumming-to-Speech Intervention for Prosody Perception in Preschoolers with Cochlear Implants.”

Lastly, Hillary Snapp, Au.D., Ph.D., associate professor and chief of audiology, presented on a new bone conduction hearing system, Adhear, for patients with conductive hearing loss. This was a sneak-peek to what can be expected from the OSSEO conference for bone conduction hearing and related technologies, which the University of Miami will also be hosting. Drs. Snapp and Telischi will be the co-chairs for this conference, which will be held on Miami Beach December
11-14, 2019.