USC hosts prestigious Lasker Lectures on cochlear implants

‘Overall, the future is bright for cochlear implants, with many possibilities for improvement and broadened indications.’

— Blake S. Wilson, Lasker-DeBakey Clinical Medical Research Awards recipient

By Amy E. Hamaker

Nearly 4,800 children in the United States are born with profound hearing loss each year, and another 5,000 will develop it by age 5, according to John Niparko, MD, chair of the Department of Otolaryngology – Head and Neck Surgery. With a cochlear implant, however, young children can show a language-learning trajectory similar to their hearing peers. “And with the spoken language,” he said, “anything is possible.”

Honored by the Albert and Mary Lasker Foundation for their contributions to developing cochlear implant technology, Graeme M. Clark, MB, PhD, AC, Ingeborg J. Hochmair, PhD, and Blake S. Wilson, DSc, discussed the past, present and future of the cochlear implant at the 2014 Lasker Lectures for the Lasker-DeBakey Clinical Medical Research Awards, held on April 10 in Mayer Auditorium at USC’s Health Sciences Campus.

To restore hearing, cochlear implants bypass damaged or missing hair cells in the cochlea to stimulate the auditory nerve directly. An electrode array collects impulses from a transmitter and sends them to different regions of the auditory nerve, which recognizes the impulses as sound.

“Fifty years ago, there was no effective treatment for patients with severe hearing loss,” said Keck School of Medicine of USC Dean Carmen A. Puliafito, MD, MBA, during his opening remarks. “Today, patients with these implants can speak clearly. Each of these honorees, in their own way, provided important advancements, and we are honored to have them here today.”

John House, MD, a clinical professor of otolaryngology – head and neck surgery, offered a few remarks about his uncle, William House, MD, whose work on single-channel cochlear...

United Cancer Research Society makes $5 million pledge for Norris HCC

By Amy E. Hamaker

The vision for the forthcoming USC Norris Healthcare Consultation Center is simple, according to Stephen Gruber, MD, MPH, USC Norris Comprehensive Cancer Center Director — a place where research, clinical care and education all converge under the same roof.

To help achieve that vision, the United Cancer Research Society (UCRS) has made a pledge of $5 million to name the ground floor of the new building. UCRS board members made a visit to the Health Sciences Campus on Mar. 31 to celebrate the pledge and see the new building. UCRS board members made a visit to the Health Sciences Campus on Mar. 31 to celebrate the pledge and see the new building.

The society has also underwritten several fundraising events in support of cancer research at USC Norris.

By Diane Krieger

The nation’s largest literary festival — Los Angeles Times Festival of Books — took its 19th bow over the weekend, attracting as many as 150,000 people to the event at the University Park Campus.

USC Senior Vice President for University Relations Thomas Sayles and Times publisher and CEO Eddy Hartenstein kicked off the two-day festival April 12, backed by the USC Trojan Marching Band.

“We are really proud to host this festival for the fourth year,” said Sayles. “USC easily serves as home to the festival because the campus pulsates with intellectual energy...
Two Keck Medicine postdocs receive Giannini Foundation fellowships

By Amy E. Hamaker

Two Keck School of Medicine of USC postdoctoral scholars recently received fellowships from the prestigious A.P. Giannini Foundation. Lindsey Mork, PhD, received her fellowship based on her work with craniofacial development, and Elaine Becket, PhD, received hers for her continuing study of epigenetics and kidney cancer.

The foundation awards six to eight new fellowships annually to physician-scientists and junior researchers for work that advances biomedical science translation into preventions and cures for human diseases. Fellowships are funded for up to a maximum of three years.

Mork, whose research takes place in the lab of Gage Crump, PhD, associate professor of stem cell biology & regenerative medicine, uses zebrafish to model human genetic disorders that affect craniofacial development.

“There are many human birth defects that include facial abnormalities, but because we can’t do experiments on humans, we often aren’t sure what went wrong to give rise to those defects,” she said. “With the zebrafish, we can knock out genes linked to different disorders and look at how the mutants develop as a proxy for what may be happening in humans. This will help us discover not only what these human disease genes are doing in the embryo, but how they may interact.”

Becket works in the epigenetics lab of Peter Jones, PhD, DSc, and has a background in DNA repair and mutagenesis, with an emphasis on genomics. “As technology advances, research becomes more expensive,” she explained. “This fellowship provides funding for my research that will allow for more comprehensive analyses into the development of kidney cancer.”

Both Mork and Becket believe that the fellowships will increase their standing in the scientific community. Becket noted that the fellowship had already opened new networks of colleagues, both in academia and in biotech.

“It’s really nice to have independent support, and the confidence that there are people out there who think my work is important,” added Mork.

Amadeo Peter Giannini, a hemophilia carrier who was committed to promoting medical research programs for the Institute for Neurological Disorders & Stroke, founded the fellowship in 1945. Since then, the foundation has provided funding to more than 700 postdoctoral biomedical researchers at California accredited medical schools.

Zilkha Neurogenetic Institute Alzheimer’s symposium examines multiple factors of disease

By Amy E. Hamaker

According to the Alzheimer’s Association, an estimated 5.2 million Americans have Alzheimer’s disease; by the year 2050, the number could triple unless developments in medicine can slow or reverse the pace.

Researchers, clinicians and students gathered at USC on April 4 to learn more about progress in prevention and treatment at the 1st Annual Zilkha Symposium on Alzheimer’s Disease & Related Disorders. Berislav V. Zlokovic, MD, PhD, director of the Zilkha Neurogenetic Institute, part of the Keck School of Medicine of USC, and the Mary Hayley and Selim Zilkha Chair for Alzheimer’s Disease Research at USC, noted that the symposium was unique due to its overarching look at the disease.

“Breaking through Barriers: Neuronal, Glial and Vascular Contributions” featured lectures on several contributing factors, including: genetic, vascular, inflammation, astrocytes, neurons, and brain mapping.

“I can’t think of another topic that fits so squarely across convergent science in basic science and medicine, informatics and health across the lifespan as Alzheimer’s disease,” said Michael Quick, MA, PhD, executive vice provost and professor of biological sciences at USC, during his opening remarks. “Alzheimer’s is a critical problem for society. We will have to innovate the best we can to find ways forward with this devastating illness.”

USC speakers included Zlokovic; Hon-Wei Dong, MD, PhD, associate professor of neurology; Paul Thompson, PhD, co-director of the Institute for Neuroimaging and Informatics and professor of neurology; Arthur Toga, PhD, co-director of the Institute for Neuroimaging and Informatics and provost professor of neurology; and Terrence Town, PhD, professor of physiology & biophysics.

Entreprenuer and philanthropist Selim Zilkha (left) and Berislav Zlokovic, director of the USC Zilkha Neurogenetic Institute, reunite at a breakfast held immediately before the recent Zilkha Symposium on Alzheimer’s Disease & Related Disorders.

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HSC News

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United Cancer Research Society board members learn more about the multidisciplinary, personalized care that will be offered at the Norris Healthcare Consultation Center during a recent visit to celebrate the society’s $5 million pledge to the project. Pictured here, from left, are: Kip Ilgenrung, UCRS executive director; Martin Bright, UCRS board member; USC Norris Comprehensive Cancer Center Director Stephan B. Gruber; and Bob Earhart, UCRS board member.

UCRS: Gift to aid fight against cancer

Continued from Page 1

UCRS was founded in 1973 to raise funds for cancer research at cancer research institutions. The society solicits donors, who help achieve the mission of playing a significant role in the elimination of cancer from the human condition.

“It helps us with our existing donors and prospects to be able to present this specific, wonderful opportunity to them rather than general cancer research,” said Bob Earhart, UCRS board member. “We really feel privileged to resume our partnership with USC Norris in a more active way. It gives us something to go out and have passion about with our prospects and donors.”
BAXTER FOUNDATION VISITS HSC — Directors of the Donald E. and Delia B. Baxter Foundation visited the USC Keck School of Medicine in April 2013 to learn about the research and clinical work of the faculty. The Baxter Foundation has been providing support to the Keck School for over 55 years.

LASKER: Cochlear implant pioneers detail their work

Continued from page 1

implants helped pioneer the technology. “We’re very honored to have the other pioneers here,” he said. “We’re all standing on the shoulders of giants.”

Clark, a Laureate Professor Emeritus at the University of Melbourne, Australia, discussed the neuroscience behind implants during his presentation. “My first challenge was to get around the damaged neural network in the inner ear,” he explained. “We could only do that by copying the coding of sound in the brain.”

Clark’s work in the 1960s and 1970s included determining how low and high frequency sounds are interpreted by the brain through temporal and place coding of sound frequencies. One breakthrough moment came in the late 1970s, when a research colleague described sounds not only as “sharp” or “dull,” but also as “vowel-like,” corresponding to different sites in the cochlea.

“The current challenge is to produce a totally implantable implant, and there is one undergoing tests right now,” Clark added.

Hochmair, the founder/CEO of MED-EL Medical Electronics, touched on current worldwide statistics in cochlear implantation.

According to Hochmair, 350,000 people have cochlear implants, with 50,000 of them implanted bilaterally; in 2013, more than 51,000 were sold globally, with 55 percent of those going to children. However, the need for more is great. At least five times as many children each year need a cochlear implant.

Hochmair also discussed various milestones in cochlear implant development, including the COCH 40 multicenter study, in which many patients using an implant were able to understand someone unknown to them on an unknown topic over the telephone. “Speech is being enjoyed for a very long time — 34 years for one patient,” she said.

In the future, Hochmair believes the ideal implant would have an individualized electrode covering the entire length of the cochlea, would be designed and implanted to allow for the long-term preservation of the inner ear structure and would provide benefit beyond speech understanding, such as music appreciation.

Wilson, co-director of the Duke Hearing Center at Duke University Medical Center, discussed the research and clinical steps that allowed the development of today’s cochlear implants.

According to Wilson, more detailed hearing is the result of a series of advances, including development and implementation of devices that are safe, a long lifespan, provide multiple cochlea stimulation sites, enable high-speed recognition and use either bilateral electrical or combined electric and acoustic stimulation.

“The concept is to present to the auditory nerve all the information that can be perceived, and then let the brain do the rest,” he said. “The brain plays an enormous role in hearing, so physicians and scientists must make sure that the brain and prosthesis work together optimally.”

Continued from Page 1

BOOKS: Health-themed booths are a hit

Keck Hospital volunteer Matthew Whalen demonstrates the importance of proper hand-washing techniques to prevent disease at the Keck Medicine of USC Health and Wellness Pavilion at the festival this year.

Amgen CEO named USC trustee

By Diane Krieger

International biopharmaceutical business leader Robert A. Bradway has been elected to the USC Board of Trustees. Bradway is chairman and CEO of Amgen Inc., the world’s largest independent biotechnology company.

Headquartered in Thousand Oaks, Calif., Amgen has 20,000 employees in more than 50 countries, having served more than 25 million patients. The company specializes in discovering, developing, manufacturing and delivering innovative human therapeutics in the fight against cancer, kidney disease, rheumatoid arthritis, bone disease and other serious illnesses.

“Bob Bradway stands among our nation’s leading executives in the field of biotechnology,” said USC President C. L. Max Nikias. “Under his visionary guidance, Amgen has significantly expanded its reach, while continuing to provide tremendously innovative therapies that restore health and save lives. Mr. Bradway brings to our board his exceptional experience and expertise, as well as his commitment to applying research to better our society.”

Bradway holds a bachelor’s degree in biology from Amherst College and a master’s degree in business administration from Harvard University.

A former investment banker, he joined Amgen in 2006 as vice president for operations strategy and was quickly promoted to executive vice president and chief financial officer. In 2010, he was named president and chief operating officer, and in 2011 he joined Amgen’s board of directors. He became the company’s chief executive officer in 2012, and its chairman in 2013.

Previously, Bradway had been managing director at Morgan Stanley in London, with responsibility for the firm’s banking department and corporate finance activities in Europe. His relationship with Morgan Stanley began in 1985, when Bradway joined the New York office as a health care industry investment banker. He later moved to London to head the firm’s international health care investment banking activities before assuming broader corporate finance management responsibilities.

In addition to being a USC trustee, Bradway serves on the advisory board of USC’s Leonard D. Schaeffer Center for Health Policy & Economics. He is a member of the board of directors of Norfolk Southern Corp., serving on its audit and governance committees.

BOOKS: Health-themed booths are a hit

Keck Hospital volunteer Matthew Whalen demonstrates the importance of proper hand-washing techniques to prevent disease at the Keck Medicine of USC Health and Wellness Pavilion on April 13.
Rebels With A Cause event raises $9 million in one night for cancer research

By Sherri Snelling

More than 50 luminaries in the entertainment, medical science, technology and business sectors gathered for the second annual Rebels With A Cause event held on March 20, resulting in the largest total funds raised to date at one event for the life-saving cancer research of David B. Agus, MD, director of the USC Westside Cancer Center and the USC Center for Applied Molecular Medicine (Camm), part of the Keck School of Medicine of USC.

The event was co-hosted for the second year by Paramount Pictures chairman and CEO Brad Grey and wife, Cassandra, along with Keck School Dean Carmen A. Puliafito, MD, MBA, who joined co-presenting sponsors for the evening, Lyneen and Marc Benioff, founder, chairman and CEO of Salesforce.com.

While Larry Ellison, CEO and chairman of Oracle, was at the event to be honored and support the cause, he announced at the end of his acceptance speech his commitment to match the evening’s fundraising efforts for $4.5 million, for a total of $9 million.

“Tonight’s announcement from Larry Ellison was a truly moving moment,” said Puliafito. “Larry believed in Dr. Agus’ work from the beginning when his Ellison Medical Foundation announced funding for the initiation of our cancer research at the USC Center for Applied Molecular Medicine. The generosity of this evening’s guests as well as the visionary champions we have in Larry and Brad Grey will continue to ensure cancer patients today and in the future have hope for better outcomes and improved survival rates at USC.”

Stage 31 at Paramount Studios was turned into a beautiful seersucker white set for the evening’s event, emceed by late-night talk show host Jimmy Kimmel. Hip-hop/R&B singer-songwriter-producer Pharrell Williams performed his Oscar-nominated tune “Happy” to open the event. Grammy, Tony and Emmy award-winning star Barry Manilow had the crowd on its feet by performing several of his hit songs, including “I Made It Through the Rain,” “Copacabana” and ending with “One Voice,” performed with 62 members of the USC-Thorton School of Music Choir, all organized by David Foster. One of the most poignant moments of the evening was actors Jonny Hill and Anna Kendrick reading aloud the life-changing letters of Agus’ patients.

“I first met David Agus through Summer Redstone, and as I’ve gotten to know David through the years, I’ve become a huge admirer,” said Grey, whose fundraising efforts over the last two years have helped raise a significant amount for CAMM. “It’s extraordinary work he’s doing. When you see how horrible cancer is, you want to do everything you can to put personalized medicine on the map and to really go after genomic testing, gene sequencing and everything we can tackle. That is what David and USC do better than anyone.”

“Both Larry and Brad have been champions for the breakthroughs in our research to find better ways to manage cancer patient treatments,” said Agus. “Philanthropy is allowing us to think outside of the box — to do things differently to fight cancer, to take the risks needed — to treat the millions of people worldwide impacted by cancer.”

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Submit calendar items at tinyurl.com/calendar-hsc.

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