Building relations with global providers

Read how one UI physician is helping change the landscape of care in Africa. See page 6 for more.

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Audiometers measure hearing acuity and are standard equipment at ENT clinics and in audiology centers. One of the earliest audiometers dates back to 1896 and was developed by Carl E. Seashore, professor of psychology at the University of Iowa. It was one of the first instruments built to register sound intensity logarithmically. Seashore’s pioneering work also led to the development of speech pathology as a discipline.
For more than 30 years, researchers in the Iowa Cochlear Implant Clinical Research Center (ICICRC) at the University of Iowa Roy J. and Lucille A. Carver College of Medicine have been focusing on patient outcomes and improving patient hearing with the development of a hybrid cochlear implant.

A five-year, $12 million grant renewal from the National Institute on Deafness and Other Communication Disorders (NIDCD), part of the National Institutes of Health, will allow UI Carver College of Medicine scientists to take their research even further.

“One of the things we’re doing with this grant is applying basic neuroscience methodologies into our research,” says Bruce Gantz, MD, the Brian F. McCabe Distinguished Chair, professor and head of otolaryngology—head and neck surgery, and director of the ICICRC.

What that means, he says, is that scientists are now not only looking at restoring hearing to a large number of patients, but determining how people separate speech from noise, which is a major problem of the hearing impaired.

With normal hearing, sound waves enter the ear canal and follow a path that eventually leads to the auditory nerve, which turns the waves into a signal the brain recognizes and understands as sound.

For people who have hearing loss and have received a standard cochlear implant, those sound waves follow the same path in the brain, but can be distorted and require the individual to delay recognition of the entire word or sentence. This delay creates confusion. As more sounds enter the path, the waves can become difficult for the brain to distinguish, Gantz says.

“A hybrid cochlear implant combines residual acoustic hearing with electrical speech processing of the cochlear implant. Recently our team has determined that the rate of recognition of words is improved because of the residual acoustic hearing. This enables the brain to react quicker to words and reduces listening effort. The low frequency hearing also allows individuals to separate speech from surrounding noise. We are just beginning to understand the timing and actual pathways in the brain that separate this information,” Gantz says. “We are using the implant to better understand the basic mechanisms that the brain uses to understand speech.”

COCHLEAR IMPLANT continues on page 4

BELOW: Using a new high-density electroencephalography, or EEG, system with an advanced source-analysis technique, UI researchers have shown that critical auditory and language areas in the brain act like normal hearing listeners in only six months after hybrid cochlear implantation.
reSeArCh newS & AWArdS
 ui recognizes excellence in research and entrepreneurship
 The University of Iowa celebrated the work of innovative thinkers, mentors, creators, and inventors at the annual Discovery & Innovation Awards Ceremony. Among those recognized were Christopher Kaufmann, MD, an otolaryngology resident physician (center left), and Marlan Hansen, MD, professor of otolaryngology and senior associate director of the Institute for Clinical and Translational Science (center right). The two founded the startup company, iotaMotion, which was awarded Faculty/Staff Startup of the Year.

For more information and list of other honorees, check out: https://research.uiowa.edu/impact/news/ui-celebrates-excellence-research-scholarship-entrepreneurship.

ui recognizes excellence in research and entrepreneurship

The research will examine patients on an individual basis, helping researchers to understand why one person hears things differently than another.

“There is variability in outcomes,” says Camille Dunn, PhD, director of cochlear implants at the ICICRC and one of the researchers involved in the program. “Why are people with the same diagnoses having different outcomes? What is making that happen? That’s what we want to find out.”

“The better we are at understanding this process, the better we’re able to preserve that neural stimulation,” Gantz says. “This is a whole different way of looking at the work of the cochlear implant.”

Cochlear Implant

This arm of the research will involve scientists from multiple disciplines across the University of Iowa, including computer science, neurosurgery, radiology, psychology, psychiatry, audiology, and music.

The four main areas of focus for this funding extension include ecology, peripheral electrophysiology, central auditory integration, and cognitive dynamics of language processing. Gantz is director of the project, and Marlan Hansen, MD, is co-director.

The NIDCD grant has helped to fund the center’s research since it started in 1985, with funding now totalling $66 million.

UI recognizes excellence in research and entrepreneurship

Focus group aims to bring relief from painful auditory condition
 A group of patients, clinicians, and researchers gathered this spring at University of Iowa Hospitals and Clinics to discuss the debilitating hearing disorder known as hyperacusis.

Patients can be very distressed by exposure to sounds that are only moderately loud but interpreted as extremely loud by their auditory systems. For these patients, this can be a painful experience. Attendees shared helpful strategies for dealing with certain situations such as dishes clanging in the kitchen. Some individuals cannot attend sporting events or dine at restaurants, and some have quit their jobs as a result of the condition. This forum provided an opportunity for patients to learn from others experiencing this condition.

Results and options continue to be discussed among those involved. Ultimately, the group hopes the discussion will lead to better clinical understanding and devices that will provide relief.

The study was held in cooperation with funding from the Alfred Mann Institute at the University of Southern California.

Focus group aims to bring relief from painful auditory condition

The study was held in cooperation with funding from the Alfred Mann Institute at the University of Southern California.
Improving function and reducing infection risk in cochlear implants

A team of University of Iowa researchers, led by Marlan Hansen, MD, professor of otolaryngology and the Marvin and Rose Lee Pomerantz Professor in Otolaryngology, received a RO1 award from the National Institutes of Health. The project, “Reduction of intracochlear fibrosis and bacterial infection using photopolymerized durable zwitterionic coatings on cochlear implant biomaterials,” received an award of $2.3 million over the next five years.

Although cochlear implants represent the most successful neuroprosthesis in clinical use, the materials used to make the implant can induce scarring in the cochlea, which can have detrimental effects on device function. Cochlear implants can also become infected by bacteria, which is a problem experienced in other medical implants.

UI researchers are developing a novel technology based on photochemistry to provide thin film coatings of cochlear implant materials that dramatically reduce scarring and bacterial infection. Research results will help toward efforts to improve functional outcomes and reduce infection risk in a wide variety of medical devices.

C. Allan Guymon, professor of chemical and biochemical engineering at the University of Iowa, is co-principal investigator and one of the collaborators.

ENT specialists recognized among the best

University of Iowa Hospitals and Clinics is pleased to have so many providers considered leaders in their field of medicine.

Several ear, nose, and throat specialists in the Department of Otolaryngology—Head and Neck Surgery were among those selected by their peers for The Best Doctors in America List® of 2017–2018.

- Scott Graham, MD – General Otolaryngology; Sinus and Nasal Surgery
- Kristi Chang, MD – Head and Neck Surgery
- Henry Hoffman, MD – Head and Neck Surgery; Laryngology
- Bruce Gantz, MD – Neurotology; Otology; Skull-Base Surgery
- Marlan Hansen, MD – Neurotology
- Jose Manaligod, MD – Pediatric Otolaryngology
- Richard Smith, MD – Pediatric Otolaryngology

Faculty updates

Graduated resident Raymond Kung, MD (18R), will remain at University of Iowa Hospitals and Clinics as an associate provider. Kung will provide care in the General Otolaryngology clinic at the main hospital and at the Iowa City VA Health Care System.

Steven Sperry, MD (14F), is transitioning to Aurora St. Luke’s Medical Center in Milwaukee, Wisconsin. Sperry joined the faculty after completing his head and neck cancer fellowship at University of Iowa Hospitals and Clinics in 2014.
In many parts of the developing world, health care is significantly impacted by the lack of resources and training available. Remote locations, limited infrastructure and technology, and few medical specialists make medical care a challenge.

Oftentimes, U.S.-based physicians partner with nonprofit organizations and local facilities to expand access to care and improve health care. University of Iowa otolaryngologist Deborah Kacmarynski, MD, sought to share her expertise through a medical mission trip to an underserved area in Africa.

Kacmarynski, a clinical associate professor of otolaryngology and the Paul N. Johnson Associate Professor in Craniofacial Abnormalities, participated in a medical mission to the Tenwek Hospital in Bomet, Kenya, where she served on a two-week assignment through Samaritan’s Purse. It was her first trip to Tenwek, which has about 300 beds and offers a range of specialized health care services. The hospital is considered a leading teaching and referral hospital in the region and one of the largest mission hospitals in Africa.

Working alongside long-term missionary pediatric surgeon Dr. Mike Gainey, Kacmarynski saw patients in clinic and wards and operated each day. She and her colleagues performed pediatric and adult otolaryngology procedures, including cleft lip repairs, tonsillectomies, adenoidectomies, neck and mouth cysts excisions, neck infection drainages, thyroidectomies, neck dissections, and excisions for head and neck cancers.

The medical and surgical expertise to perform complex cases is limited in this region. Without the care of visiting physicians like Kacmarynski, many patients would endure much different health outcomes.

“In one case, I repaired a cleft lip in an 8-month-old baby that will allow a normal smile, breathing, eating and speech. With one surgery, this child will be able to have a normal life,” says Kacmarynski.

Another important role of the visit was to help train the host facility’s general surgery residents. Kacmarynski enjoyed the interaction and was impressed with trainees at the hospital. “The resident I trained the most with is a PGY-3 named Sinkeet, who first did an endoscopy fellowship and is very good in ENT. He plans to return to his tribe in Maasas and serve there.”

Kacmarynski admits she had to adjust her expectations to a slower pace and treatments based on the available resources. “I had difficulty deciding to forego surgery on children who would have had treatment at home and let some complicated babies die with less treatment than I could have provided at home.”

Despite the challenges, she enjoyed the trip and plans to build upon her relationship with the hospital, physician faculty, and Dr. Gainey. Kacmarynski hopes to return to Tenwek and continue developing year-round specialty care and otolaryngology training for residents, especially in pediatric and cleft cases.

Kacmarynski also had the opportunity to take members of her family along. “We as a family fell in love with the Kenyan people, the residents, the faculty, and the hospital staff. We loved Kenya and all had an opportunity to serve, even my children, who played with inpatients, played music for them, and counted pills for the pharmacy.”

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Deborah Kacmarynski, MD
Serving to expand care abroad

ABOVE: Kacmarynski (center right) guides a Tenwek resident physician who needed to remove the left half of the patient’s thyroid. The young patient had multiple neck infections, which were thought to be recurring from a congenital cyst.

FAR LEFT: Physicians at the Tenwek Hospital in Bomet, Kenya, observe surgery with Drs. Kacmarynski and Gainey.

LEFT: Deborah Kacmarynski, MD (left), and Mike Gainey, MD, pause for a photograph between cases.

ONLINE EXTRA

Dr. Kacmarynski describes her experience at the Tenwek Hospital at:
https://vimeo.com/267791036
When Rick Nelson, MD, PhD (07MD/PhD, 12R, 17F), began medical training at the University of Iowa, he had little idea where the experience would lead him. He knew he wanted to be a doctor, but like many medical students, he wasn’t certain of a specialty.

Nelson completed his medical degree, and while pursuing his PhD, his neurological research led him to an interest in the ear and hearing loss. An opportunity to work in the lab of Richard Smith, MD, professor of otolaryngology—head and neck surgery, furthered his attraction to auditory neurosciences.

He pursued residency training in otolaryngology at the UI, where he was exposed to the intricate anatomy of the ear and finesse of otologic surgery. He recalls being challenged and inspired by his faculty mentors. “Iowa is unique with its mentoring of clinician-scientists. Many of the faculty are clinician-scientists who do great high-end clinical work while pursuing research that is advancing the field forward.”

Throughout his training, he felt as though he had a lot of autonomy, which really helped him grow comfortable and confident in his abilities. “I had several wonderful mentors at Iowa, especially Drs. Bruce Gantz and Marlan Hansen, who are great teachers and researchers,” recalls Nelson.

Looking to emulate his academic mentors, he decided to pursue subspecialty training through a neurotology surgical fellowship also at the UI. “I was fortunate to match as a neurotology fellow, where I was allowed to fully participate in cases and develop my skills,” adds Nelson.

**A PERSONAL CONNECTION**

Nelson’s individual situation also helped shape his career and interest in auditory sciences. He had mild hearing loss in one ear since he was a child because of a fall. While interviewing for fellowships, he experienced worsening hearing due to what he thought was fluid in his ear. He was examined by Bruce Gantz, MD, who advised Nelson that he would need surgery to remove a small cholesteatoma, an abnormal skin growth in the middle section of his ear.

Having been trained to perform the surgery himself, Nelson knew what was involved in the procedure. On the day of his surgery, he was operating with Gantz on other patients before scrubbing out to be Gantz’s last patient of the day. A case of the mentor operating on the mentee, as it turned out.

“I had full faith in Dr. Gantz and the entire staff. I should, since I trained under him,” shares Nelson. “Having gone through the procedure, I definitely feel I have more empathy for my patients and what they are going through. Now my hearing in the operated ear is in the normal range and better than it was when I was a child after the fall.”

**SUPPORTING RESEARCH AND MENTORS**

The laboratory and training experiences at the UI set him on a path in academic medicine. After completing fellowship training, Nelson joined the faculty at Indiana University School of Medicine, where he hopes to foster the same interest in auditory neuroscience and spirit of mentorship. He directs the Temporal Bone Lab and is principal investigator in the school’s Auditory Neuroscience Research Lab. Mentors at Iowa continue to play a role in his career. Smith is a collaborator on research projects, and Nelson still runs challenging cases by Drs. Gantz and Hansen for their input.

He chose to make a major gift to the department of otolaryngology—head and neck surgery to fund promising research projects. Nelson knows a career as a clinician-scientist is not an easy path. There are highs and lows in academic research that require persistence, as well as supplemental funding. By giving back, he hopes to support the work of his mentors and thus enhance the career opportunities they are able to provide future residents and fellows training at the University of Iowa.

“The training and mentoring that I received really allowed me to get set up for my career. I felt compelled to give back.”

**RICK NELSON, MD, PhD**
To learn more about how philanthropic support helps advance the important work of the UI Department of Otolaryngology—Head and Neck Surgery, please contact:

SEAN MATTHYS
Sean.matthys@foriowa.org

The University of Iowa Center for Advancement
P.O. Box 4550
Iowa City, IA
52244-4550
319-335-3305
or 800-648-6973

The UI acknowledges the University of Iowa Center for Advancement as the preferred channel for private contributions that benefit all areas of the university.

For more information or to make a donation, visit the secure website givetolowa.org/OTO.

If you do not want University of Iowa Health Care to contact you for fundraising efforts based on your status as a patient, please contact the University of Iowa Hospitals and Clinics Privacy Officer at 800-777-8442.

 Resident research on display
Residents discussed various research projects and presented their findings in a poster session during the annual Otolaryngology Resident Research Day. Colin Driscoll, MD, chair of the Department of Otorhinolaryngology—Head and Neck Surgery at Mayo Clinic was the keynote speaker.

Afterwards, residents and their families, along with departmental faculty and staff, gathered for a graduation celebration.

AAO-HNSF awards grant to resident
Third-year resident physician Andrew Davis, MD, received a Centralized Otolaryngology Research Efforts (or CORE) research grant from the American Academy of Otolaryngology-Head and Neck Surgery. The project, “SOD Mimics Enhance Chemoradiation Responses of HNSCC via Oxidative Stress,” aims to find another adjuvant treatment for head and neck cancer.

Small molecule superoxide dismutase mimetic is currently in clinical trials at University of Iowa Hospitals and Clinics for normal tissue protection during radiation therapy. According to Davis, “It would be ideal to have an adjuvant treatment that protects normal tissue and sensitizes the tumor to radiation and chemotherapy. These mimetics have a very well-tolerated side effect profile, as well.” Davis seeks to validate this hypothesis in hopes of making small molecule SOD mimetic a mainstream addition to adjuvant therapy.

“This potentially could push forward the role of chemotherapy and radiation in head and neck cancer while making these treatments more tolerable,” states Davis.

The CORE grants program is a collaboration of several agencies, societies, foundations, and industry supporters. Davis is working under the mentorship of Douglas Spitz, PhD, professor of radiation oncology and director of the Free Radical Radiation Biology Program.
The 2018 graduates

Residents and fellows who graduated from the University of Iowa this year are off to pursue their next medical career moves.

Graduating residents (pictured left to right):

Marisa Buchakjian, MD, PhD: pursuing a head and neck oncologic surgery fellowship at the University of Michigan in Ann Arbor, Michigan

Katherine Ostedgaard, MD: pursuing a pediatric cleft and craniofacial fellowship at UC Davis Health in Sacramento, California

Seiji Shibata, MD, PhD: remaining at University of Iowa Hospitals and Clinics for a neurotology fellowship

Raymond Kung, MD: remaining at University of Iowa Hospitals and Clinics for a one-year faculty position before moving to Los Angeles, California

Christopher Kowalski, MD: joining Alaska Native Medical Center in Anchorage, Alaska

Fellows:

Jonathan Fowlkes, MD, head and neck oncology fellow: joining Rocky Mountain Ear, Nose, and Throat Center in Missoula, Montana

Abraham Sheffield, MD, PhD, pediatric otolaryngology fellow: joining Quincy Medical Group in Quincy, Illinois

Daniel Sun, MD, neurotology fellow: joining the faculty at Johns Hopkins Hospital in Baltimore, Maryland

New colleagues

Residents:

CLINICAL TRACK:

Douglas Bennion, MD, PhD
BS, neuroscience, Brigham Young University, Provo, Utah
MD, PhD, University of Florida College of Medicine, Gainesville, Florida

Monica Rossi, MD
BS, molecular and cellular biology, University of Illinois at Urbana-Champaign
MD, University of Illinois College of Medicine, Peoria

Madia Russillo, MD
BS, pharmacology, Stony Brook University, Stony Brook, N.Y.
MD, Medical College of Wisconsin, Milwaukee, Wisconsin

RESEARCH TRACK:

Tatiana Correa, MD, MPH
BSE, biomedical engineering, University of Iowa, Iowa City
MPH, University of Iowa College of Public Health
MD, University of Iowa Carver College of Medicine

Ryan Thorpe, MD
BS, biological sciences, University of Buffalo, Buffalo, New York
MD, Lewis Katz School of Medicine at Temple University, Philadelphia, Pennsylvania

Fellows:

Noah Syme, MD – head and neck oncologic surgery and reconstructive surgery
MD, University of New Mexico School of Medicine, Albuquerque, New Mexico
Residency, University of New Mexico

Ahmed Alkhateeb, MBBS – pediatric otolaryngology
Masters of Science, McGill University, Montreal, Canada
Residency, McGill University, Montreal, Canada

ALUMNI CORNER

Receive a special award or distinction? Change your contact information lately? Let us know so we can share department news and keep in touch. Send details to iowaoto@uiowa.edu.
Expanding the understanding of tinnitus
The 26th Annual International Tinnitus and Hyperacusis Conference was held in June in Iowa City. Clinicians and researchers discussed the latest information and treatment options available. The conference was attended by a number of patients with tinnitus and hyperacusis, as well as manufacturers who were on hand to share their latest products.

Richard Tyler, PhD, director of the conference, was pleased with the interest from clinicians committed to helping their patients. The 27th annual conference will be held June 13-14, 2019, at the University of Iowa.

Iowa reception in Atlanta
Alumni and friends of the Department of Otolaryngology—Head and Neck Surgery are invited to the Iowa Reception during the 2018 AAO-HNSF Annual Meeting & OTO Experience.

Join us for an evening of fine food, drinks, and views of the Atlanta skyline. We will gather atop the Westin Peachtree Plaza!

**Sunday, October 7, 2018**
6:30 p.m. – 8:30 p.m.
Sun Dial Restaurant, Bar & View
The Westin Peachtree Plaza
210 Peachtree Street NE, Atlanta

RSVP to anita-kafer@uiowa.edu or 319-356-2173

On the road
Innovative hearing loss research taking place at the University of Iowa is on display as part of the Institute for Clinical Translational Research exhibit, “Discover, Develop, Deploy,” traveling on the UI Mobile Museum.

The Mobile Museum travels across the state to raise awareness of the impact of UI research. Exhibits showcase how translational research taking place at the UI is impacting lives across the state and beyond.
Treatment and services available for:
- Head and Neck Cancer
- Hearing Aids
- Nasal and Sinus Conditions
- Otology/Neurotology
- Plastic Surgery and Cosmetic Services - Facial
- Skull Base Surgery
- Speech and Swallowing
- Tinnitus

Contact Us
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Iowa City, IA 52242

Department information:
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iowaoto@uiowa.edu
uihc.org/medical-services/otolaryngology

Appointment scheduling:
319-356-2201

UI Health Access for the general public:
800-777-8442

UI Consult for referring providers:
800-332-8442

Department news, events, and information:
medicine.uiowa.edu/oto

MARK YOUR CALENDARS

Oct. 7-10  AAO-HNSF Annual Meeting and OTO Experience
Atlanta, Georgia

Oct. 7  Iowa Alumni Reception, Sun Dial Restaurant, Bar & View
Atlanta, Georgia

Oct. 20  UI Carver College of Medicine Homecoming Tailgate
Iowa City (UI football game vs. University of Maryland)

April 26-28, 2019  UI Carver College of Medicine Spring Alumni Reunion
Iowa City

May 2019  Functional Endoscopic Sinus Course
Iowa City

May 2019  52nd Head and Neck Cancer Reconstructive Surgery Course
Iowa City

June 13-14, 2019  27th Annual Management of the Tinnitus and Hyperacusis Patient
Iowa City

June 2019  Research Day and Resident/Fellow Graduation
Iowa City

July/August 2019  Basic Science Course
Iowa City

Educational meeting information with dates and details can be found at
medicine.uiowa.edu/oto/education/conferences-and-events.

Iowa reception in Atlanta
Attending the 2018 AAO-HNSF Annual Meeting & OTO Experience in Atlanta?
Be sure to join us for our Iowa Reception!
See page 11 for details.