



COLLEGE OF EDUCATION
AND HUMAN SCIENCES

Special Education and
Communication Disorders

ENHANCING LIVES

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Message from the Department Chair

Our history spans nearly 100 years, and we are leading the way to a bright future. Since 1976, the Barkley Memorial Center has provided a rich environment for research discovery, professional training, and clinical care that enhances the lives of individuals with special needs, their families, schools and communities. We are inspired everyday by the accomplishments of those we serve: children and adults communicating independently, individuals hearing for the first time, adolescents improving behavior to achieve success, and children with sensory impairments or learning disabilities enhancing their academic performance.

Over \$3 million in grant awards annually funds research to expand our understanding of the brain, improve behavioral assessments, and develop innovative interventions that impact learning, behavior, communication and sensory access throughout the lifespan. Faculty research is discovering links between inactivity and falling risk, identifying critical aspects of brain development for premature infants, identifying early risk factors for communication deficits, helping stroke patients regain swallowing function, and facilitating development of reading skills through writing activities.

With nearly 600 students enrolled each year, our training programs are preparing practitioners and researchers with the knowledge and skills to improve academic, social, communication and life outcomes for children, youth and adults with disabilities. A faculty led mentoring program provides first-year teachers with helpful supports. Access to the latest technologies prepares our students for 21st century jobs.

Clinical care extends our work to the community, the region, and the world serving those with, or at risk for, speech, language, hearing, balance or reading difficulties. The Barkley Speech Language and Hearing Clinic sees more than 550 clients each year for speech and language services and over 1300 individuals for hearing and balance difficulties. The Schmoker Reading Center serves over 170 struggling readers each year.

I invite you to read more about how the Department of Special Education and Communication Disorders is carrying out its mission to serve people with special needs. I think you will agree that our future looks bright.

Sincerely,

 Sherri Jones

The Department of Special Education and Communication Disorders (SECD) is housed at the Barkley Center on the East Campus of the University of Nebraska-Lincoln.

When the Barkley Center opened in 1976, its programs were parts of two different divisions under two different departments residing in two different colleges. Since that time, SECD has not only unified its structure under one department in the College of Education and Human Sciences, it has unified its mission: **Enhancing the lives of individuals with special needs, their families, schools and communities.**

The depth and breadth of programming offered by SECD is remarkable. This publication can't begin to share all of the worthwhile research, teaching and service that emanates from the Barkley Center. But in these pages you will get a snapshot of the variety of impactful activities our faculty, staff and students are engaged in every day.

To help highlight our work, we have organized this booklet into four themes:

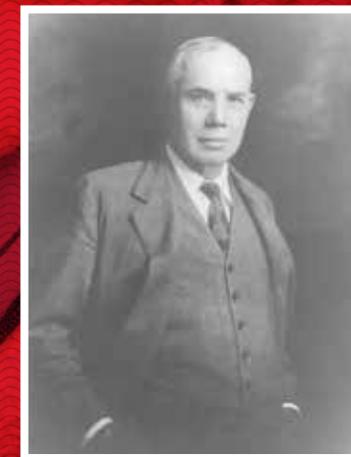
- **Enhancing Learning**
- **Enhancing Communication**
- **Enhancing Health and Well Being**
- **Outreach and Service**

William E. and Edna M. (McDowell) Barkley both began their careers as schoolteachers. William moved to Lincoln in 1888 to start a successful career in banking and insurance, and Edna arrived to teach. Before their marriage, she served as a principal at Elliott School. She also served as dean of women at UNL for several years.

Edna gradually lost her hearing and through assistance she received at UNL, she and William became interested in programs and services for the hearing impaired and people with special needs. At William's death in 1944, his will established an annual gift program at UNL to prepare professionals to serve the deaf and hard of hearing, children with speech deficits, and adults with deafness.

After Edna's death, a 1970 bequest from the Barkley estate became a legacy that resulted in the construction of the Barkley Center, three additions to the building and ongoing financial support for operations of the Department of

Special Education and Communication Disorders. The Barkley Center is a fitting memorial to William and Edna Barkley and the spirit of their generosity that has made a profound impact on the special needs community in Nebraska.



SECD offers undergraduate and graduate programs in special education, speech language pathology and audiology.
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ENHANCING LEARNING



Michael Hebert directs the Kit and Dick Schmoker Reading Center and is researching strategies to improve the skills of struggling readers.

Strategies for struggling readers

Reading is the fundamental building block for learning, and it's well established that children who struggle to read are going to have an uphill battle. Finding new interventions to help children improve reading outcomes is essential to their success in school and in life.

Through a four-year, \$399,000 developmental grant from the U.S. Department of Education's Institute of Education Sciences, SECD Assistant Professor Michael Hebert is carefully crafting a reading intervention that uses different text structures to help struggling readers improve their reading and writing skills. It's a deliberate research process that includes building, testing and analyzing models to find promising strategies.

"We're building 25-30 minute lessons that we hope teachers will find user friendly."

"We're hoping that by the end of four years we have an intervention that is feasible for schools to implement," says Hebert. "We're building 25-30 minute lessons that we hope teachers will find user friendly. Feasibility and usability are the two main goals. [Preliminary results] show there is potential for the intervention to be effective for improving the reading comprehension of students with reading difficulties."

Hebert uses five basic text structures. For example: the classic compare and contrast. During the research, readers are asked to identify text structures and write notes about them. In the



compare and contrast example, students would identify what things are compared and note similarities and differences. Students then write their own passages based on a specific text structure. It helps them understand how text is constructed and hopefully provides understanding about the author's purpose.

The research has demonstrated that kids may have different perspectives about a passage. One might see a passage as a sequence of events, such as a historical timeline, and another might decode it as a problem-solution passage. Both could be right. What's important is that students are thinking about how the structure of the text can help them understand the author's message.

"As they grow as readers and writers," says Hebert, "they're going to make decisions about the purpose that they're reading for and what information they want to get out of a passage. Then it will help them decide for themselves what's important on that particular day or for that particular passage."



ENHANCING LEARNING

Student Engagement Project provides resources for Nebraska schools

Making connections is a big part of the learning process for graduate students—connecting with faculty, connecting with professionals in the field, and perhaps most importantly, connecting the learning process with real world experiences. The Student Engagement Project is providing just that kind of experience for graduate students.

The project was hatched in 2009 after SECD Professor Reece Peterson testified before Congress on the hot button topic of physical restraint and seclusion of students in the nation's K-12 schools. Peterson's expertise in the area of student behavior problems attracted the interest of the Nebraska Department of Education (NDE).

"NDE was looking for ways to assist schools with improving student behavior to reduce exclusionary discipline, as well as to reduce dropout and improve graduation rates," said Peterson. "From that time on, we focused on identifying potential strategies that schools could use to improve in those two areas." It turns out that strategies for both goals are similar.

Peterson engaged CEHS graduate students in the project to identify potential strategies, review research and summarize the findings in a practitioner friendly format. These documents are now shared with educators across Nebraska via the project website and can be used for planning for individual K-12 students and for longer range local school improvement planning.

Reece Peterson and a group of Ph.D. students coordinating the k12engagement.unl.edu website.

"We're trying to disseminate practitioner friendly resources, because school practitioners don't always have time or resources to access journal articles," says Ana Damme, a Ph.D. student in school psychology from Brock, Nebraska. "I've enjoyed the project because we are a collaborative team with an important mission of helping make a difference in schools."



Documents are free and publicly available at k12engagement.unl.edu. More than 80 documents created by project students are available for download, including strategy briefs, program briefs and policy documents. All are focused on building and sustaining K-12 student engagement to improve student behavior and graduation rates. Use of the website has grown dramatically, as more materials have been posted. Social media and a planned newsletter are targeted to educators in Nebraska and across the country.

Mentoring first year teachers

Imagine yourself in the shoes of a first-year teacher.

It's your responsibility to teach a couple dozen or more students from various backgrounds and ability levels what they need to know to be successful academically and to advance to the next level. You're often on your own and entering with limited experience. Despite a quality teacher preparation program, you may be a little rattled.

Some school districts have teacher induction programs that help make that first-year experience a little easier. They provide mentors and other supports. But some new teachers find the resources lacking, and special education teachers are possibly more anxious than most because of the unique challenges their students present.

With that scenario in mind, Sue Kemp, associate professor of practice, jumped at a chance to apply for an NDE first-year teacher mentoring grant. She was awarded the three-year grant and partnered with The New Teacher Center's e-Mentoring for Student Success (eMSS) program. The web-based program couples new teachers with master teachers who have expertise in specific instructional areas, including special education.

"We do a lot to prepare teachers for success," says Kemp, "but it's often just too much when they get started." Too overwhelming, too stressful, with too little help. However,

the online support was a big lift for many of the students Kemp helped to pair with online mentors.

New teachers were helped with behavior management, professional relationships and teaching methods. Kemp served as a troubleshooter and liaison with eMSS. She would like to find funding to extend the project because it has proven valuable to Kemp's recent graduates and her graduate students who were already teaching in many cases.

"My mentor gave me different curriculum ideas to use with my modified math class that had no set curriculum," said Kayla Jorgensen, a teacher at Bellevue West High in Nebraska. "She went out of her way to contact teachers within her building (in Kansas) and ask what they do and use and shared those resources with me. My mentor was able to offer me a lot of advice, and having someone email me every week to check in on how things were going was beneficial."

"We do a lot to prepare teachers for success."



Sue Kemp extends her reach beyond campus to support first-year teachers.



ENHANCING COMMUNICATION

Cynthia Cress' research is developing early assessment tools for communication risk.

Getting a jump start on communication risk

Delays in language or communication development can be one of the first signals that children are at-risk for learning. Early detection and assessment of communication risk can help children receive critical interventions to help with a wide range of developmental challenges, including autism, hearing loss and language impairments.

of research we can find about early intervention says do it early, as intensely as possible and as soon as we can detect that there is a risk."

Cress' Infant Social and Communication Behavior Scale (ISCBS) is in the norming process and being used with infants in Lincoln and at nine other locations across the country and in Canada. The ISCBS is unique for being designed for the general population of infants, not a subset of children who are already known to have communication risk. Cress hopes that distinction will lead to widespread use of the assessment and earlier identification of more children who could be at risk of communication disorders. Her research also includes development of a one-page, check-the-box screener (the Communication in Infancy and Social Screener) that any parent could use as a first step in discerning potential communication issues with their infants.

"Part of the reason there has never been a screener or an assessment at this age range is because it's really hard to recognize what these behaviors are," said Cress. With this tool and some training, it's hoped that professionals will be able to reliably predict if children are at risk and recommend a course for intervention.



Assessment tools are commonly available to use with children 12 months old and above. Developing reliable communication development assessments for infants as young as two months is the focus of SECD researcher Cynthia Cress whose passion is helping young children with severe disabilities.

"There's no assessment out there that you can give that's remotely systematic much less normed for kids with severe disabilities in the first year," said Cress. "Every bit

"Every bit of research we can find about early intervention says do it early, as intensely as possible and as soon as we can detect that there is a risk."



ENHANCING COMMUNICATION

Helping preterm infants overcome challenges

The life of a preterm infant is a fragile and precarious one. Undersized and underdeveloped, they aren't really prepared for the realities of their new world. Advances in medicine have allowed these newborns to survive at a high rate, but not without challenges. One persistent problem in many preterm babies is an inability to feed on their own. It often delays their discharge from intensive care—an expensive delay upwards of \$5,000 a day.

Over the last 30 years, this problem has driven Barlow and his colleagues to tackle the neurophysiology and biology of feeding in humans. Among the remarkable outcomes of this research was a neurotherapeutic invention, the NTrainer, that helps babies establish independent oral feeding skills. The NTrainer is a patented medical device approved by the Federal Drug Administration and widely used in neonatal intensive care units (NICU) across the country. It delivers a pulsed, patterned pneumotactile stimulus that's attached to the baby's silicone pacifier.

Babies learn natural sucking patterns which gets them out of the NICU quicker and accelerates their natural development.

Barlow's team has new challenges to solve that will further reduce the time to diagnose and treat feeding disorders in preterm babies. A new five-year \$3.3 million grant from the National Institutes of Health will fund a project to map the molecular pathways and biomarkers for the expression of five putative brain genes.

"We're going to be mapping gene expression that is responsible for development of things like hunger, satiation, and the biomechanics of sucking/eating and the assembly of the relevant parts of the brain that make up feeding

circuits," said Barlow. "Through a tiny 50 microliter sample of saliva we'll reveal the neurodevelopmental status of the infant's brain—whether or not they're actually ready to begin feeding. Right now it's mostly guesswork. This will greatly improve the diagnostic efficiency, and ultimately the quality of care of this most fragile population will take a quantal leap forward."



Not only is it financially costly, it is developmentally costly. According to Steven Barlow, Corwin Moore Professor in SECD, when babies are unable to feed independently it comes with a host of problems that can follow them into adulthood.

"It turns out there's a strong link between feeding disorders and the ability to learn language, to learn speech and to learn at school," says Barlow.

Steven Barlow uses the patented NTrainer that he helped develop.

Swallowing research holds promise

Faculty and staff in SECD are enhancing the lives of people across the life span. From preterm babies to senior adults recovering from stroke, the goal is to help people live and thrive independently. "My research interests are really driven by what would help people," sums up Angela Dietsch, assistant professor. "What are the places in our field where we really don't have good evidence or good tools, and how can I help fill those gaps?"

A niche Dietsch is researching may help stroke survivors regain swallowing function to speed their recovery and help them get back to independent living. Dietsch says there are a wide range of reasons why people have swallowing problems and not many solutions. She is pursuing some of her own emerging evidence, and that of others, that the mechanics of swallowing can be manipulated by properties such as taste.

"There are some taste profiles that excite areas in the brain that are important not just for sensation but for the movement that underlies swallowing," she says. A current project is attempting to determine what tastes—sweet vs. sour vs. bitter, etc.—elicit the most advantageous brain activation and swallowing movement patterns. Dietsch will work with both healthy subjects and those with swallowing problems. She is hoping to discover additional evidence that targeted stimulation of taste can lead to enhanced recovery. In randomized clinical trials, magnetic

resonance imaging will be used to evaluate brain stimulation. That will be done at UNL's Center for Brain, Biology and Behavior. Radiographic tests using modified barium swallows are also part of the research and will be conducted with local hospital partners.

Dietsch is also hoping to collaborate with UNL's Food Science department to develop specific taste strips for her research. Development of taste strips could have broad commercial application as well, but for now, helping people overcome swallowing disorders is driving her research.



Angela Dietsch is researching ways to help stroke patients more quickly regain normal swallowing function.

CELEBRATING OUR HISTORY OF INNOVATION AND ACCOMPLISHMENT

1920s

First courses in special education and speech development and correction offered at the University of Nebraska-Lincoln. Graduate training in the Department of Educational Psychology and Measurement (master's and doctoral) was a combination of educational or school psychology and special education. Programs and laboratory experiences were heavily laced with measurements, evaluation and learning as applied to regular and exceptional children and youth.

1933

First graduate level courses in speech pathology were introduced in the UNL Department of Educational Psychology and Measurements. Speech clinic opened on campus and coursework was taught in close connection with the clinic.

1940

Dr. Marshall Hiskey, a founding member of the Division of Special Education received his doctoral degree in Educational Psychology and Measurement.

1941

The Hiskey-Nebraska Test of Learning Aptitude published by **Dr. Hiskey**, considered one of the best instruments of its time for assessing learning abilities of hearing impaired children.



1940

Formal programs in communication disorders started at UNL by **Dr. Leroy T. "Doc" Laase**, a native of Wisner, Nebraska, who came to UNL from Hastings College. Considered one of the "founders" of the Division of Speech Pathology and Audiology, he served as department chair from 1948-68. Housed in the Temple Building, the division was part of the Department of Speech Communication in the College of Arts and Sciences.



1940

Speech and hearing clinic enhanced with assistance of **Dr. Lucile Cypreansen**, also considered a "founder" of the Division of Speech Pathology and Audiology. One of the adults that Dr. Cypreansen worked with during her career was **Mrs. Edna Barkley**. Mrs. Barkley was hearing impaired and Dr. Cypreansen worked with her to improve her lip reading skills.



1948

Course in **Audiometric Testing and Hearing Rehabilitation** was introduced. The Department of Educational Psychology and Measurements and the Department of Speech and Dramatic Art jointly offered a major and a minor in Special Education that were "designed to prepare teachers to work with handicapped children such as speech-defective, hard of hearing and emotionally disturbed."

1949

The Department of Educational Psychology and Measurements and the Department of Speech and Dramatic Art planned a **joint program in speech therapy**.

1952

A program of training for special education teachers was approved for the Department of Educational Psychology. **Dr. Hiskey** returned to Nebraska to lead the program in the Division of Special Education.

1953

The first master's degree in speech therapy was awarded.

1967

The Division of Speech Pathology and Audiology was granted authority to confer doctoral degrees.

1974

Gov. James J. Exon approves construction of the \$1.3 million, 33,000 square feet Barkley Center.



1971

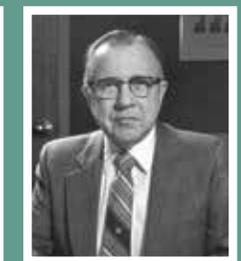
Chancellor D.B. Varner announced the **William E. Barkley** family's gift of approximately \$3 million to support speech impairment, hearing impairment and the adult deaf. Mr. Barkley's wife **Edna** was hearing impaired, and she worked closely with **Dr. Cypreansen** to improve her lip reading skills. The gift was a direct result of that assistance and the Barkleys' relationship with Dr. Laase. A committee was subsequently appointed to develop recommendations for use of the Barkley Trust funds. Its first recommendation was to build the William E. Barkley Memorial Center. Trustees of the estate approved the recommendation.

1976

Dr. Sheldon Stick, department chair of Speech Pathology and Audiology, with the support of the masonic organization Scottish Rite, established the **Rite Care Clinic** to serve children with language and learning disorders.

1976

Barkley Center dedication ceremony held on Sept. 24. The Barkley Center would house the Division of Special Education led by (clockwise beginning upper left) **Dr. Dwaine Alcorn**, the Department of Speech Pathology and Audiology led by **Dr. Sheldon Stick**, and the Specialized Office for the Deaf and Hard of Hearing directed by **Dr. Robert Stepp**.



CELEBRATING OUR HISTORY OF INNOVATION AND ACCOMPLISHMENT

1978

The **Department of Speech Pathology and Audiology** (formerly a division of Speech Communication) was moved from the **College of Arts and Sciences to Teachers College**.

The **Division of Special Education** within the Department of Educational Psychology of Teachers College, **became a separate department**.

1981

The **Sertoma Hearing Aid Bank** started at the Barkley Center as a collaborative project among the Nebraska Sertoma Clubs, the Barkley Center, and the Nebraska Commission for the Deaf and Hard of Hearing.

1983

The **Department of Speech Pathology and Audiology and the Department of Special Education** were joined to form the **Department of Special Education and Communication Disorders** in Teachers College. **Dr. John Bernthal** was appointed as Director of the Barkley Center and department chair. Previously the center had a separate director and each department had separate chairs.



1985

Barkley trustees approved a named professorship in speech pathology and **Dr. David Beukelman** was hired as the Edna Barkley professor. Dr. Beukelman started the Augmentative and Alternative Communication Laboratory.



1986

An **18,000 square foot addition** was completed to the Barkley Center.



1988

Department initiated development of training in early childhood special education.

1990

UNL Chapter of the National Student Speech Language Hearing Association was initiated.



1993

Specialization in the area of autism was created in the department to meet the high need of a growing population of children.

1996

Barkley trustees approved the William Barkley Professorship and **Dr. Mike Epstein** was hired in the area of special education.



1996

The **Gladys and Lewis Ricketts Interactive Computer Classroom** was dedicated.



1999

UNL chapter of the **Student Council for Exceptional Children** was initiated.



2002

Nebraska Autism Spectrum Disorders Network begins with offices at the Barkley Center. The Nebraska ADS Network provides information and training about autism spectrum disorders throughout the state.

2003

Another addition to the **Barkley Center** was completed.

SECD, in collaboration with the departments of Teaching, Learning and Teacher Education and Child, Youth and Family Studies, initiated the Kit and Dick Schmoker Reading Center.



2004

The master's program in audiology transitioned to the professional doctorate degree (**Doctor of Audiology - Au.D.**).

2008

The **Nebraska Children's Hearing Aid Loaner Bank** began to provide hearing aids to children from birth to age 18. It was renamed HearU Nebraska in 2011.



2005

The **Academy for Child and Family Well Being**, a research partnership with Boys Town National Research Institute, was established. The Academy performs research on child and family interventions for youth with emotional and behavioral needs.

2009

UNL chapter of the **Student Academy of Audiology** was initiated.

2010

A 9,000 square foot addition and renovations to the **Barkley Speech Language and Hearing Clinic** were completed.

2012

Following Dr. Bernthal's retirement, **Dr. Sherri Jones** was hired as department chair and director of the Barkley Center.



The Lion's Club partnered with the department to support the **Lions Hearing Aid Bank** that serves hearing impaired individuals ages 19-65.

2014

Barkley Speech Language Hearing Clinic began offering **accent reduction therapy** to international clients via telepractice.



Dr. Steven Barlow was hired in the area of speech language pathology as the Corwin Moore Professor. Dr. Barlow leads the Communication Neuroscience Laboratory.

2015

Study abroad in Costa Rica was established for speech language pathology and special education programs.

2016

Study abroad in Nicaragua was initiated for the audiology program.

40

1976 **YEARS** 2016

2016

SECD celebrates the **40th anniversary of the Barkley Center** with an open house, special seminars and a reunion of graduates, faculty and staff.



ENHANCING HEALTH AND WELL BEING

Julie Honaker's research explores how to identify and minimize fall risk in hospital patients.

Research to keep us on our feet

There's a very real problem with older adults who are discharged from an inpatient hospital stay: they often find themselves back in the hospital after a fall at home. The return trip may have nothing to do with the reason for their original stay, except that while in the hospital their strength and/or balance system was compromised from inactivity.

Julie Honaker, associate professor, is working with nursing staff, physical therapists, audiologists and even computer science professionals to address how best to assess and monitor falling risk both in the hospital and after patients leave the hospital. This research involves screening patients in the hospital, monitoring their activity and mobility, and providing them better information about how to be safe at home and improve their recovery experience. This project couples with CHI Health St. Elizabeth, and another project partners with Bryan Health Medical Center East and Bryan Heart.

"There are two tiers to the Bryan Health project," said Honaker. "The first stage is looking at patients with class two and three heart failure. These are individuals who are still mobile but they have restrictions. They have quite a bit of fatigue with exertion so they are not as able to move as they would in their normal daily living. Because of that they have a greater risk of falling."

This cross-sectional study compares an at-risk group and a healthy group of both men and women in different age groups. The second step of the study is a clinical

trial involving an in-home exercise intervention program. Participants will be assessed at different stages in the program to assess if this would be an effective program for individuals with heart failure. The hope is that it would prove effective and be a strategy to reduce fall risk and improve balance function in heart patients.



SECD students get valuable hands-on experience in clinical settings such as the Dizziness and Balance Clinic at the Barkley Center.



ENHANCING HEALTH AND WELL BEING

A legacy of professional preparation

Everyone wants a quality life, but sometimes our health or disabilities stand in the way. Fortunately, there are professionals who are committed to improving our quality of life. SECD is proud of its rich tradition of preparing professionals for this calling. Faculty and staff in the department are

“They start working with individuals with hearing loss from the very first week,” said Boney, who has been teaching students for nearly 40 years. “They begin afraid of the technology and freaking out at the growing part. But it’s great to see them after their externship. They have developed into my peer and my colleague.”



Audiologists work with a wide range of patients from infants to centenarians, diagnosing their condition, assessing their needs and providing solutions, such as hearing aids. The work of audiologists results in quality of life improvements for patients. It’s rewarding work and SECD students get exposure to directly helping people throughout their studies at UNL.

The Barkley Center, the East Campus home to the department, houses a full-scale speech-language-hearing and balance clinic. Children and adults are referred to the clinic for diagnosis

and treatment recommendations. Students in the AUD program get to put their rigorous training to work in the clinic and start to develop their personal skills directly working with patients.

“We’ve been fortunate to have a great working relationship with the medical professionals in Lincoln,” says Boney. “Family practice, pediatrics and internal medicine often refer to us. We have a good reputation for providing strong services and good follow up.”

devoted to high standards of instruction and support for students learning to be health professionals.

Stephan Boney, associate professor of practice, coordinates the four-year professional doctoral degree for audiology—SECD’s program that prepares professionals to work with people who have sensory impairment. It includes three years in-residence, didactic work and clinical assignments, followed by a yearlong externship.

Stephen Boney is dedicated to preparing new generations of audiologists.

Potential to change lives through science

The National Institutes of Health (NIH) describe Usher syndrome as “the most common condition that affects both hearing and vision.” The major symptoms in Usher are hearing loss, balance problems and an eye disorder called retinitis pigmentosa—a degeneration of the retina. Usher syndrome is an inherited disorder caused by gene mutations that are passed genetically from parents to children.

SECD Professor Tim Jones is collaborating with other scientists on groundbreaking research that holds promise for potentially short-circuiting the gene combinations that cause Usher. In the laboratory, researchers have been able to treat genetically altered mice (mice that mimic the gene defect of Usher) with a drug that bypasses or redirects the mutated gene code and essentially “rescues” or restores a normal gene code. It appears that when the drug is introduced at the right time (a few days after birth), it restores hearing and vestibular (balance) function in the mutated mice.

Jones has been working with Michelle Hastings at the Chicago Medical School at Rosalind Franklin University of Medicine and Science. She and her colleagues developed the mutant mice and rescue drug called Antisense Oligonucleotide or ASO 29. Jones receives mice treated with ASO 29, others that are not, and still others that are treated with a different antisense drug that has a “scrambled” gene code. Jones then evaluates the vestibular and auditory function of the mice to help determine if ASO 29 is indeed “fixing” the dysfunction.

Highly sensitive equipment introduces a stimulus to the mouse’s head that can record how brain

neurons fire in response. The degree and amplitude of the response can be detected at various levels of sensitivity. This testing provides evidence of normal or abnormal vestibular function. So far, it appears that the vestibular and auditory functions of mice treated with ASO 29 are recovering normal function despite the presence of the Usher-like mutation.

Jones said it could take years before this testing in mice could make the leap to human trials, but he is excited about the potential transfer of this new science to human application. Potentially, he says, genetic testing could identify if human babies have Usher syndrome, and treatment could be administered even before birth, to circumvent Usher syndrome and its debilitating effects.

“This is basically what we live for,” says Jones. “This is a tremendous opportunity. The prospect of rescuing vestibular and auditory function and blindness is really quite spectacular, and that’s what’s so exciting. You have to be careful and keep everything in perspective. Do the science and understand what’s going on, and then move forward in safety. So there’s a ways to go, but it’s extremely exciting. No doubt about it.”



The remarkable science of Tim Jones and colleagues could lead to amazing breakthroughs that prevent genetic hearing loss.



OUTREACH AND SERVICE



Gift of hearing changing the lives of children, families and adults

Helping children get the best possible start in life is a common thread that helps weave the fabric of SECD. A powerful example is HearU Nebraska, a service that brings the gift of hearing to infants and children up to age 18.

Early detection of hearing loss and early intervention helps children with hearing loss avoid falling behind their peers in important developmental areas. Nebraska is a national model for getting infants screened within their first month—a practice launched decades ago by faculty members in the department working with state officials and local hospitals. State data show 99.8 percent of babies in Nebraska receive early screening. When a hearing problem is diagnosed, that’s when HearU Nebraska steps in to help families that cannot afford hearing aids.

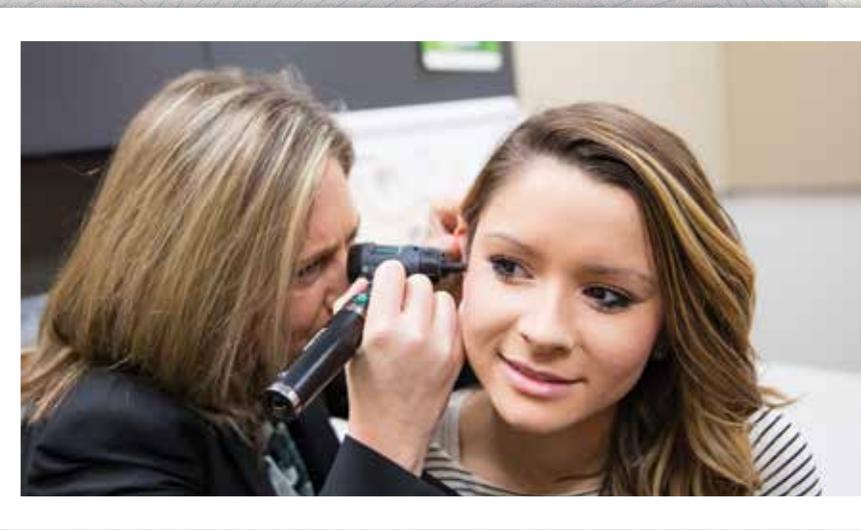
“If a child is diagnosed early and treatment can begin before six months of age, these children develop very close to peers for overall speech, language and cognition,” said Stacie Ray, associate professor of practice and founder of HearU Nebraska. “We are doing a good job of screening, but what if a family can’t afford hearing aids?”

The cost of hearing aids can be \$4,000 or more—beyond the reach of many families who don’t have Medicaid, other assistance or private insurance. HearU Nebraska has provided hundreds of hearing aids to children along with earmolds, batteries and a parent kit at no cost to the family.

Stacie Ray and HearU Nebraska are enhancing the lives of children and adults with hearing loss.

HearU Nebraska even pays dispensing fees to audiologists across the state.

The HearU Nebraska Fund at the University of Nebraska Foundation accepts tax-deductible contributions (fund number 12099). In 2014, the Foundation’s Women Investing in Nebraska group awarded the program \$75,950 to provide hearing devices for more than 30 children. The Early Hearing Detection and Intervention program at the Nebraska Department of Health and Human Services provides additional funding and support. Since 2008, a total of 441 hearing aids have been dispensed to 263 children across Nebraska.



For older Nebraskans, two statewide organizations provide hearing aids through SECD’s Speech Language and Hearing Clinic. The Lions Hearing Aid Bank provides refurbished hearing aids to individuals 19-64 years of age, and the Sertoma Hearing Aid Bank provides one refurbished hearing aid to individuals age 65 or older. Since 1999, over 2,000 hearing aids have been provided to individuals over age 65. Both organizations welcome donations of hearing aids of any kind. They can be sent to the Barkley Center.



OUTREACH AND SERVICE

Barkley Speech Language and Hearing Clinic

The UNL Barkley Speech Language and Hearing Clinic provides services for individuals with speech, language, hearing and balance impairments. Clinic providers serve all ages and address a broad range of disorders. Services are provided by speech language pathology and audiology faculty members certified by the American Speech-Language-Hearing Association and graduate student clinicians in the speech language pathology and audiology training programs. The opportunity for students to provide professional services to individuals in need is an important part of their learning.

The clinic's modern practices and technology help patients and students alike. For example, recently updated augmentative and alternative communication (AAC) equipment allows students to provide state of the art evaluation and treatment for individuals with severe communication disorders.

A new electronic practice management system makes scheduling and billing simpler for patients and insurers and complies with new federal law on medical records.

"Prospective employers and medical externship sites where we send our students, tell us that students from programs that use these systems are much better prepared to work in those practice settings," said Deanne Splattsoesser, lecturer and clinic coordinator. She says that the electronic record system also helps department

The Barkley Speech Language and Hearing Clinic includes a memory clinic to assist individuals with age-related memory difficulties.



researchers by providing easy access to potential research participants, and soon the clinic will be adding a web-based portal for patients to get information about their medical services provided by the clinic.

New clinic services offered include a memory clinic for individuals and their significant others who are concerned about age-related memory difficulties, accent reduction therapy delivered via telepractice, specialized infant hearing assessment, and comprehensive assessment for dizziness and imbalance.

Kit and Dick Schmoker Reading Center

The Kit and Dick Schmoker Reading Center provides quality literacy instruction for children from kindergarten to twelfth grade struggling with reading and writing.

It provides service to the community, training for CEHS students and is a platform for conducting research. Instruction is individualized for each child with the goal that each improve reading skills, gain greater confidence as a reader, and develop a love for reading. The center is operated collaboratively by three departments: Special Education and Communication Disorders; Teaching, Learning and Teacher Education; and Child, Youth and Family Studies. Annually, the center tutors more than 100 children who experience reading difficulties. It is currently housed at the Home Economics Building, but it will soon relocate to occupy space on the first floor of the Barkley Center.



"They think I'm teaching them something, but working with them constantly makes me thankful for my own opportunities."—SECD student Olga Mwenentanda describing her experience working with special education students.

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