

The University of Texas at Dallas  
School of Behavioral  
and Brain Sciences

*The Impact of  
Aage Møller*  
1932 - 2022

2022  
ANNUAL  
REPORT





Dear Friends,

Greetings from the [School of Behavioral and Brain Sciences at UT Dallas!](#)

I am writing to welcome you all to our second schoolwide annual report! Our 2,500 undergraduate students, 500 graduate students, 15,000 alumni, and many friends are a diverse and supportive family with interests in the mind and brain and a shared ambition of excellence in research and education, long-term growth, and service to our community.

The human brain is a complex organ that can be understood at multiple scales, from the interplay of the molecules (microscopic) to the interactions of brain regions (macroscopic) to the sensory, motor, and cognitive functions that are produced (behavioral). Of particular interest to our faculty and students are the relations that span the different scales and different functions within a particular level: How do molecular functions impact the regional brain networks, and how does each affect behavior? How do social behaviors change cognitive development? What brain network changes are associated with memory loss, substance use, depression, autism, or chronic pain? And finally, what can we do to alter cellular and molecular, brain network, or behavioral functions, and/or their interactions, to remediate disease or otherwise improve the human condition?

Our school has extraordinary undergraduate students in psychology, neuroscience, and speech, language, and hearing sciences; clinical graduate students in two top-10 programs in speech pathology (#10) and audiology (#2); master's students preparing for careers and further education; and bright and creative PhD students performing cutting-edge research in cellular and systems neuroscience, cognitive neuroscience, psychology, and speech, language, and hearing sciences. Our school exists for three reasons: (1) to educate students; (2) to prepare these students for the workplace, for further professional training, and for further education; and (3) to perform scientifically and socially impactful cutting-edge research.

We are a STEM school, focusing on science, and are symbiotic with more applied schools of medicine and psychology and with industry. About half of the BBS scientific mission takes place at our research centers, in which BBS faculty and students constitute the academic core and lifeblood: [Callier Center for Communication Disorders](#), [Center for BrainHealth](#), [Center for Vital Longevity](#), [Center for Advanced Pain Studies](#), [Center for Children and Families](#), and the [Texas Biomedical Device Center](#).

In the pages of this report, we wish to share with you a look back at the people and research, accolades and activities that have defined the school over the past year. And importantly, we aim to highlight our increasing relationships with supporters from our strong alumni base and from leaders in the Dallas-Fort Worth community.

Please enjoy the interesting news and features in this report. If you are sparked to help us build specific programs, recruit top faculty and students nationally and internationally, or create new research or teaching environments, please let us know! Thanks for your support.

Best wishes,

Steven Small

Dean, School of Behavioral and Brain Sciences

# Neuroscience Pioneer, Beloved Professor Leaves Profound Impact on Field, UTD

**Dr. Aage Møller**, a world-renowned innovator in the fields of neurological monitoring, sensory systems and neuroplasticity, and a professor at The University of Texas at Dallas for 25 years, died Aug. 19 at the age of 90.

Møller, a Founders Professor of neuroscience in the School of Behavioral and Brain Sciences (BBS), is perhaps best known for his development of intraoperative neurophysiological monitoring (IONM), a technique that reduces risk of serious complications during brain surgery.

At UTD, he helped develop the neuroscience program, now a full-fledged department, and was still teaching almost 500 students every semester.

Dr. Richard C. Benson, UTD president and Eugene McDermott Distinguished University Chair of Leadership, praised Møller as the exact kind of scholar the University needed to achieve its rapid ascent.

“UT Dallas is one of the nation’s fastest-advancing universities, whether measured by student enrollment, the size of its research portfolio or the impact that our graduates have on the North Texas community,” Benson said. “So much of this success is due to well-established scholars electing to continue their careers at UT Dallas when the University was still very young. There is no better example of this than the 1997 arrival of Aage and Margareta Møller.”

Dr. Inga H. Musselman, UTD provost, vice president for academic affairs and the Cecil H. Green Distinguished Chair of Academic Leadership, said Møller had “quite an amazing career.”

“He made tremendous contributions in the areas of research, teaching and mentoring. His classes were full, and his students loved him,” she said.

Møller was born April 16, 1932, in Finderup, Denmark. Fascinated with sound, he was an amateur radio operator in his teen years. His aptitude for electronics led him to study in Stockholm — first at the KTH Royal Institute of Technology, then the Karolinska Institute. His research revolved around hearing.

Møller received his doctorate in medical science in 1975 from the Karolinska Institute. He later studied the cochlea, including a 1977 study presenting proof that the cochlea in a living animal is more frequency-selective for weak sounds than loud sounds.

In the 1970s, Møller became an expert on hazards of noise exposure and represented the Environmental Protection Agency in hearings held by the Department of Labor.

Møller moved to the U.S. in 1978 to join the University of Pittsburgh School of Medicine’s otolaryngology department. His interests shifted to tinnitus and auditory brainstem response (ABR). His work was the first to describe how different components of the ABR are generated, and he connected common disorders, including tinnitus and chronic pain, to maladaptive neuroplasticity.

He modified methods used for electrophysiological brain research into a system reducing risk of nervous system damage during surgery. In 1988 he published the first book on the subject, which established the medical field of IONM. Møller helped found the American Society of Neurophysiologic Monitoring and served as its second president.



*Dr. Aage Møller arrived at The University of Texas at Dallas in 1997.*

He later earned membership in the American Auditory Society, the American Neurotology Society, the Society for Neuroscience and many other professional organizations.

Møller arrived at UTD in 1997. His research pivoted to neurophysiologic abnormalities in individuals with autism. He developed teaching programs in the biology of pain, sensory systems and neuroplasticity, and established one of the first programs to teach IONM to graduate students.

Professor Emeritus Dr. Bruce Gnade, UTD vice president for research from 2006 to 2016, said the University “has lost a great scholar, but more importantly, a great human being.”

“Aage was one of the nicest men I have ever met. He would often stop by my office just to check to see if everything was going well. He was a very humble man. Unless you took the time to look at his CV, you would never know that he was one of the leaders, if not the leader, in tinnitus research.”

Dr. Alice O’Toole, inaugural Aage and Margareta Møller Professor of psychology, said there is no better role model than Møller. He and his wife Dr. Margareta Møller, who died in 2011, established the professorship in 2008 to support research activities of a faculty member in BBS.

“What made him such a great role model for students was that he never stopped learning,” O’Toole said. “It was never difficult for him to understand the world from the perspective of the student, because he never stopped being one.”

Møller published 24 books, more than 200 peer-reviewed articles and over 100 book chapters. He gave more than 300 invited lectures worldwide. He served

as chairman of the UTD Institutional Review Board (IRB) from 2002 to 2005, and from 2007 to 2017. In that role, he was instrumental in building the human subjects research committee.

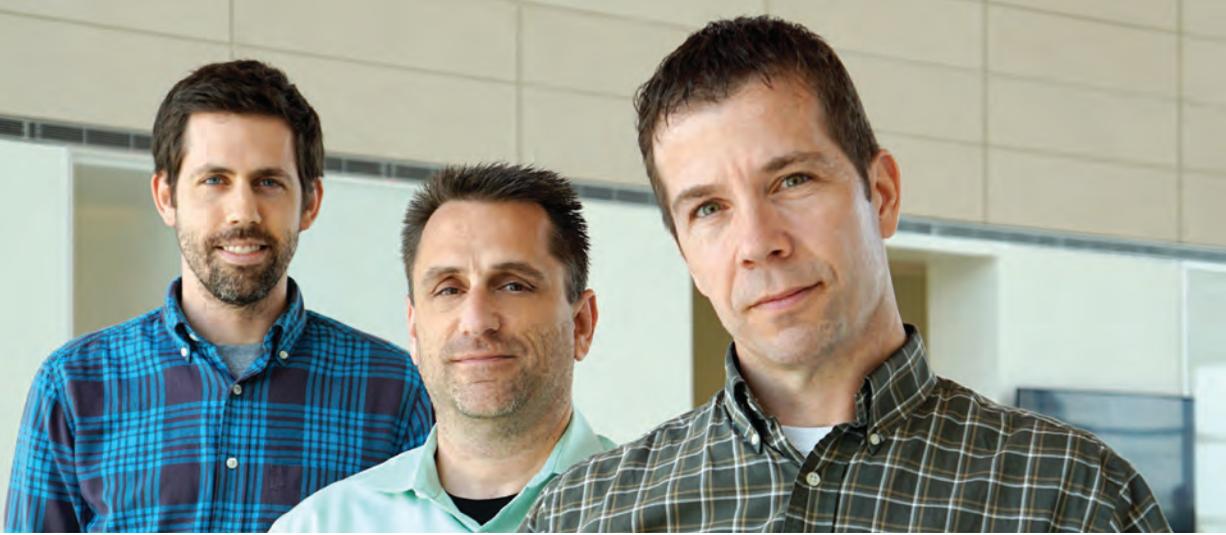
He received the President’s Teaching Excellence Award for Tenure-Track Faculty from UTD in 2011, the same year he established the Aage Møller Teaching Award. He also supported students through the Aage and Margareta Møller Endowed Scholarship, the Aage and Margareta Møller Fund for Vets of the U.S. Armed Forces, and by funding student travel in BBS.

“Dr. Aage Møller was our most distinguished neuroscientist and our most beloved colleague,” said Dr. Steven Small, BBS dean and Aage and Margareta Møller Distinguished Professor in Behavioral and Brain Sciences, an endowment the Møllers also created in 2009. “His work has helped establish UT Dallas as a home for exceptional neuroscience research and education, and a leader in studies of tinnitus and neuroplasticity. We will miss him greatly.”

*“What made him such a great role model for students was that he never stopped learning.”*

**Dr. Alice O’Toole**

Møller is survived by his wife, Zara; his sister, Karen Sorensen; three children and their spouses: Peter Møller (Maryam Møller), Jan Møller (Kelli Møller) and Sanaz Okhovat (Edward Hamilton); and three grandchildren. Memorial contributions may be made to the Aage and Margareta Møller Endowed Scholarship, the Aage Møller Teaching Award or to a charity of the donor’s choice.



From left: Dr. Seth Hays, Dr. Robert Rennaker and Dr. Michael Kilgard

## VNS Therapy: A Stroke of Genius

For the 7 million American survivors of stroke, increasing the effectiveness of physical rehabilitation for mobility and motor skills could provide a transformative boost in quality of life.

Researchers from the [Texas Biomedical Device Center \(TxBDC\)](#) conceived a therapy involving vagus nerve stimulation (VNS) to rewire circuits in the brain more than a decade ago. Scientists have since been refining the technique to treat a variety of disorders, including stroke. In August 2021, the Food and Drug Administration (FDA) approved their rehabilitation system for chronic ischemic stroke survivors, making it the first such treatment of its kind.

The Vivistim Paired VNS System is produced and commercialized by MicroTransponder, a spinoff company started by UT Dallas graduates. The results of a pivotal double-blind, placebo-controlled, randomized clinical trial were published in April 2021 in *The Lancet*. The study showed that in patients with arm and hand weakness after stroke, pairing VNS with rehabilitation exercises led to improvements that were two to three times greater than the control group receiving rehabilitation alone.

Dr. Michael Kilgard, the Margaret Fonde Jonsson Professor of neuroscience and interim executive director of the TxBDC, described FDA approval of the system as “the most significant success” in the center’s 10-year history.

“This announcement means that stroke survivors all over the country can soon begin receiving a safe and effective therapy to improve their recovery,” he said.

The vagus nerve travels up the neck from the chest and abdomen and relays information between the brain and the body. In VNS, an implanted device stimulates the nerve with electrical impulses. Similar devices are currently FDA-approved to treat epilepsy and depression.

Researchers affiliated with the TxBDC, BBS and the Erik Jonsson School of Engineering and Computer Science

developed paired VNS, combining limb movements with electrical stimulation delivered via an implanted device in the neck.

“The idea is that we can’t fix the region of the brain that’s been damaged by stroke, but we can help the remainder of the brain rewire to get the job done,” Kilgard said. “This recovery doesn’t happen spontaneously.”

The initial work with VNS at UT Dallas began with Kilgard and Dr. Robert Rennaker, associate director and chief technology officer for the TxBDC, the Texas Instruments Distinguished Chair in Bioengineering and a professor of neuroscience.

“This long road began with a paper in *Nature* in 2011 about treating tinnitus,” Kilgard said. “The founders of MicroTransponder stayed in Dallas to commercialize paired VNS therapy for both stroke and tinnitus.”

Navzer Engineer PhD’04, chief scientific officer at MicroTransponder, worked with Kilgard on the initial preclinical VNS studies.

“Our stroke study published in *The Lancet* was the culmination of a large amount of preclinical research that we started over a decade ago at UT Dallas,” Engineer said. “This would not have

been possible without a dedicated team of amazing students and researchers at UTD.”

Dr. Seth Hays, associate professor of bioengineering, started working on the project as a postdoctoral student in spring 2012, joining then-doctoral candidate Navid Khodaparast BS’06, MS’09, PhD’13 and Ben Porter MS’11, PhD’11.

Hays described targeted plasticity therapy and VNS for stroke as “the definition of grassroots” – the approach was invented and developed at UT Dallas, by UT Dallas students, staff and faculty.

“A lot of people in Texas should be proud of this – the individuals who enrolled in the study, the team at MicroTransponder, the medical centers that were involved and the University,” Hays said.

*“Stroke survivors can soon begin receiving a safe and effective therapy to improve their recovery.”*  
Dr. Michael Kilgard

# Park's Lifetime of Achievements Celebrated

In May, the Center for Vital Longevity celebrated the many achievements of its founder, Dr. Denise C. Park, at the center's 10th-anniversary dinner and a subsequent symposium, *The Cognitive Neuroscience of Aging: A Festschrift in Honor of Dr. Denise C. Park*.

Carole and Scott Murray served as chairs for the dinner gala, held at the Dallas Museum of Art, with Myrna and Bob Schlegel acting as honorary dinner co-chairs. Attendees included CVL Advisory Council Chair Lindsey Klumpers Sanders, UT Dallas President Richard C. Benson, friends and family of Park, CVL supporters, community leaders, research collaborators and former students from around the world.

"For decades, we've supported Alzheimer's disease research and organizations that work to understand the disease and to take care of those suffering because of it," Bob Schlegel said. "The Center for Vital Longevity's research is so important to that effort, and we are honored to be a part of it."

One of the biggest surprises of the night came from CVL Advisory Council member Greg Boydston and his wife, Denise, who announced a personal \$100,000 donation to permanently endow the Denise C. Park Research Excellence and Innovation fund. The Texas Instruments Alumni Association pledged an additional \$200,000 to the center. Boydston said he and his wife have seen the impact of Alzheimer's disease firsthand in family members.

"We hope that, through your efforts and the efforts of CVL and other institutes, that these issues will someday be behind us," he said.

Dr. Michael Rugg, director of the center, provided some quantitative measures of Park's and the CVL's impact and success, including more than 200 published papers and over \$36 million in competitive research grants since 2011. The center has helped to educate and train more than 120 undergraduate, master's and doctoral students, an additional 18 postdoctoral fellows, and more than 30 research assistants.

Dr. Joshua Koen, a former postdoctoral fellow at CVL who is now an assistant professor of psychology at the University of Notre Dame, said that the CVL "holds a special place in my heart as a place where I developed not only as a scientist, but as a person, and where I was able to follow my passion in my career."

Park said she was "overwhelmed by all of the love and affection in the room," and credited guest Dr. Addison Woodward for starting her on her career when she was still an undergraduate.

"To encourage a young woman who was clueless, and from a very limited background, to get a PhD in 1969 was a pretty amazing thing to do," Park said of Woodward's influence. "I knew what I wanted to do for the rest of my life from the time I was a freshman in college, and I still love my work."

Woodward, who taught Park 50 years ago, described the young Park as "curious and focused, and really, really smart. She energized those around her."

Park concluded by thanking the people of Dallas for their generosity in supporting the CVL's research. She also praised her children for being "everything I wanted them to be — ethical, contributing human beings in the world."

Woodward and Rugg presented Park with a blown glass sculpture, recognizing her lifetime contributions to the field of cognitive aging. Rugg announced that henceforth, the award will be known as the Denise C. Park Research Excellence and Innovation Award and will be presented biennially to those whose contributions to the field of cognitive aging have led to the betterment of humankind.

The following day's symposium, held at the CVL, included 10 of Park's former students and colleagues as guest speakers, as well as poster presentations and a barbecue dinner. Some of those who couldn't attend in person sent video tributes, including two from Taiwan and Germany.

*The list of dinner sponsors, photos and a video of the evening can be viewed at [cvt.utdallas.edu/events/10th-anniversary](http://cvt.utdallas.edu/events/10th-anniversary)*

*Dr. Denise C. Park, founder of the Center for Vital Longevity*



# New Tenure-Track Faculty

*From left: Dr. Stacie Warren,  
Dr. Pumpki Lei Su and  
Dr. Millie Rincón-Cortés*



## **Anila D’Mello**

### **Assistant professor of psychology**

**Education:** PhD, behavior, cognition and neuroscience, American University; BA, psychology and government, Georgetown University

**Research areas:** Cognitive neuroscience of language and social cognition across development and in disorders; role of cerebro-cerebellar circuits in language, cognition and autism spectrum disorders; neuroimaging of language and cognition across typical and atypical neurodevelopment

## **Kelly Jahn**

### **Assistant professor of speech, language, and hearing**

**Education:** PhD, speech and hearing sciences, University of Washington; AuD, Vanderbilt University School of Medicine; BS in psychology and BA in communication sciences, University of Connecticut

**Research areas:** Neural signatures of auditory hypersensitivity and emotional sound processing across the lifespan; development of evidence-based clinical protocols, diagnostic tools, and personalized treatments for hearing loss and hyperacusis; cochlear implants; auditory electrophysiology

## **Jerillyn Kent**

### **Assistant professor of psychology**

**Education:** PhD, psychological and brain sciences, Indiana University Bloomington; BS in psychology and biology, William & Mary

**Research areas:** Motor abnormalities in psychopathology, particularly cerebellar abnormalities in individuals with psychotic disorders; neuromodulation interventions for psychopathology

## **Millie Rincón-Cortés**

### **Assistant professor of neuroscience**

**Education:** PhD, neuroscience and physiology, New York University; BS in biology, University of Puerto Rico, Mayagüez

**Research areas:** Normative and stress-induced plasticity of reward and mesolimbic dopamine function, emphasis on early development and the postpartum period

## **Pumpki Lei Su**

### **Assistant professor of speech, language, and hearing**

**Education:** PhD, hearing and speech sciences, Vanderbilt University; MS, neurodevelopmental disabilities, Vanderbilt University; BS, communication sciences and disorders, Northwestern University

**Research areas:** Language development in children with autism spectrum disorder and bilingual children; parent-child interaction; word learning; language assessment for culturally and linguistically diverse children; Mandarin development; eye-tracking

## **Alva Tang**

### **Assistant professor of psychology**

**Education:** PhD, developmental psychology, McMaster University; BS, psychology, University of Toronto

**Research areas:** Developmental changes in social-emotional development; individual differences and social-contextual factors; mental and physical health

## **Stacie Warren**

### **Associate professor of psychology**

**Education:** PhD, clinical psychology, University of Illinois at Urbana-Champaign; MA, psychology, University of Illinois at Urbana-Champaign; BA, psychology, California State University, Long Beach

**Research areas:** Clinical psychology, psychopathology, investigating individual differences in developmental pathways to psychopathology across the lifespan in hopes of reducing its prevalence and impact; executive function, emotion regulation, cognitive and affective neuroscience; cognitive training; noninvasive systems neuroscience

## **Arriving in January 2023**

### **Lena Nguyen**

#### **Assistant professor of neuroscience**

**Education:** PhD, experimental psychology, Texas Christian University

### **Katelyn Sadler**

#### **Assistant professor of neuroscience**

**Education:** PhD, biology, Duquesne University; BS, biology, University of Pittsburgh

# New Non-Tenure-Track Faculty



Fearon-Drake



Jahangiri



Mosley

## Kristin Kuhlman Atchison

**Assistant professor of instruction in psychology**

**Education:** PhD, psychological sciences, The University of Texas at Dallas; BS, psychology, Texas A&M University

**Research areas:** Pedagogical studies; studies of infant cognitive development

## Danielle Fearon-Drake

**Assistant professor of instruction in psychology**

**Education:** PhD, educational psychology, Baylor University; MS, clinical psychology, University of the West Indies; BS, psychology, Northern Caribbean University

**Research areas:** Cognitive processes and functions in children with developmental disorders; how sense of belonging and resilience relates to persistence among college students

## Stephanie Fowler

**Clinical assistant professor in speech, language, and hearing**

**Education:** PhD, communication sciences and disorders, The University of Texas at Dallas; AuD, The University of Texas at Dallas; BA, communication sciences and disorders, Wichita State University

**Research areas:** Best practices in didactic and clinical audiology education, music perception and appreciation for listeners with hearing loss; interprofessional education of audiologists

## Jana Hunsley

**Assistant professor of instruction in psychology**

**Education:** PhD, experimental psychology, Texas Christian University; MS, experimental psychology, Texas Christian University; MA, social work, University of Chicago; BS, psychology, Indiana Wesleyan University

**Research areas:** Family trauma; adoptive sibling support; post-adoption therapeutic interventions

## Faisal Jahangiri

**Assistant professor of instruction in neuroscience**

**Education:** MD, Khyber Medical College, University of Peshawar, Pakistan; mini-fellowship in movement disorders from the Department of Neurological Sciences, University of Nebraska; D.ABNM, diplomate, by the American Board of Neurophysiological Monitoring

**Research areas:** Intraoperative Neurophysiological Monitoring (IONM); sensory, motor, and language mapping of the brain; deep brain stimulation (DBS); Auditory Evoked Potentials (AEP); Electroencephalography (EEG); Electrocorticography (ECoG); Pelvic floor mapping

## Diana Kim

**Assistant professor of instruction in neuroscience**

**Education:** PhD, neuroscience, Rosalind Franklin University; BA, neuroscience and behavior, Barnard College, Columbia University

**Research areas:** Regulation of striatal nitric oxide signaling by glutamate and dopamine in experimental parkinsonism

## Cornetta Mosley

**Clinical assistant professor in speech, language, and hearing**

**Education:** AuD, University of Washington; PhD, speech and hearing science, University of Washington; BA, communication sciences and disorders, Louisiana State University

**Research areas:** Aural rehabilitation; improving access to hearing health care; facilitating healthy aging for adults with hearing loss

## Hannah Pourchot Neale

**Assistant professor of practice in speech, language, and hearing**

**Education:** PhD, communication sciences and disorders, The University of Texas at Dallas; MS, speech language pathology, The University of Texas at Dallas; BS, communication sciences and disorders, University of Oklahoma

**Research areas:** Early speech and language development; broad development of infants and children with hearing loss

# Research Capsules



Psychology professor **Dr. Amy Pinkham** (above) published a study in *Psychological Medicine* exploring the inability of those with severe mental illness, particularly schizophrenia patients, to accurately evaluate their own abilities and performance.

Individuals with schizophrenia — and to a lesser extent, those with bipolar disorder — struggle with introspective accuracy relative to healthy individuals, often causing difficulties with day-to-day functioning and quality of life.

The current study tested three cohorts — people with schizophrenia, people with bipolar disorder, and healthy individuals — on the Wisconsin Card Sorting Test and the Penn Emotion Recognition Task, with each participant also rating their confidence in their answer. They received feedback after each question, with researchers focused on the relationships between confidence and accuracy over time in each group.

Results demonstrated that individuals with schizophrenia showed a greater disconnect between confidence and accuracy than healthy individuals — they were

more likely than healthy individuals to feel confident when incorrect. Importantly, within the schizophrenia group, overconfidence on previous questions was predictive of future incorrect questions. Those with bipolar disorder were intermediate to the schizophrenia and healthy groups.

“These findings suggest that individuals with schizophrenia are not incorporating external feedback into their self-assessments of their abilities, which may contribute to the sustained use of unsuccessful strategies or poor decision-making,” Pinkham said.

**Dr. Ted Price BS'97** (below), director of the **Center for Advanced Pain Studies (CAPS)**, is corresponding author of a study in *Science Translational Medicine* yielding important clues in the pursuit of more effective treatments for chronic pain by detailing how human dorsal root ganglia neurons differ from animal cells.

The CAPS research team examines how nociceptors generate pain by charting the full range of messenger RNA strands produced in these cells, learning what genes are expressed. By showing the significant differences between nociceptors in mice and humans, Price's team illustrates why many proposed pain treatments that succeed in mice fail in humans.

“This paper is the next step, clearly demonstrating the profound scale of those differences,” Price said.



“An entire set of nociceptors that many people study in mice just aren't found in humans. There are subtypes in humans that don't exist even in nonhuman primates.”

Researchers used an advanced technique called spatial transcriptomics to profile all the gene activity in a dorsal root ganglion tissue sample. By describing the neuron types present and detailing their gene expression, the team has a much better picture of what the physiological functions are for each gene.

“It's rare to have access to both the human tissue we used and to the technology,” said CAPS fellow Dr. Diana Tavares-Ferreira. “Spatial transcriptomics allows us to overcome the large size of these neurons and to see with a degree of certainty where and how a gene is expressed in human nociceptors.”

**Center for Vital Longevity** director **Dr. Michael Rugg** (above) published a study in *The Journal of Neuroscience* that ties anterior shift — the forward migration of brain activity elicited during retrieval versus encoding — to the fading ability to retrieve details of one's experiences.

Examining several aspects of anterior shift in unprecedented detail using fMRI scans, researchers found that while age is a factor in the size of the shift, it is not the only one.

“There was prior evidence for an anterior shift when remembering

visual scenes after a brief interval, but no one had studied the shift when remembering something that occurred 10 to 15 minutes ago,” Rugg said. “We also are the first research group to report the shift when recalling faces as well as scenes. And our study is the first to show that the shift is, on average, larger in older people than younger people — although it varies significantly within both age groups.”

Rugg said that the shift reflects “a bias in favor of semantic, abstract information at the expense of perceptual detail. When someone is unable to remember detailed information about an event, they’re forced to rely on a more generic, ‘gist-like’ representation.”

“It’s important to note that there is overlap in the shift between high-performing older adults and poorly performing younger ones,” Rugg added. “Whether you’re aged 20 or 70, the bigger your anterior shift, the worse your memory performance.”



**Dr. Pamela Rollins** (above), professor of speech, language and hearing at the **Callier Center for Communication Disorders**, authored a study in the *Journal of Autism and Developmental Disorders*,

evaluating the potential effectiveness of Pathways Early Autism Intervention, a commonly used intervention for Texas toddlers, after a child’s third birthday. The findings underscore the need for early diagnosis.

“This parent-mediated intervention has shown success in children from birth to age 3,” Rollins said. “Here, we evaluated it for use in the 3- to 4-year-old range as well and found that the large social development benefit in the under-3s becomes less significant the following year.”

The Pathways treatment directs caregivers to follow the child’s lead, use wait time, limit distractions and demands, and engage in face-to-face positioning, mutual gaze, animation and imitation. The use of mutual gaze — which fails to develop beginning between ages 2 and 6 months in autistic infants — distinguishes the Pathways program from other methods.

Study participants under 3 years of age who received the Pathways intervention saw greater improvement in their social skills than children who received services-as-usual, but for children over 3, the effect didn’t quite reach statistical significance.

Rollins said social development and interaction is the core challenge of autism, as opposed to language development.

“You can work on language, but if children don’t have the social skills to support the language, it’s like building a house on water,” she said.

**Dr. Gagan Wig** (above right) of the **Center for Vital Longevity** published a paper in *Nature Aging* demonstrating that a key measure of the neurological health varies in relation to education level, suggesting that environmental factors related to socioeconomic status



might accelerate brain aging.

Researchers used an archive of resting-state functional MRI scans of the brains of adults ages 45 to 86 who underwent two to five MRI scans. They documented that as people get older, areas of the brain that had not previously worked together begin to collaborate more. The separation of functional networks breaks down; scientists call this desegregation.

“People who have this pattern of reduced segregation tend to have worse performance on memory tests,” research scientist Dr. Micaela Chan said. “We have scans of people for whom we have clinical data up to 10 years later. What we’re seeing is that those who started declining in this measure of brain network organization were more likely to have cognitive impairment in the future, independent of genetic risk and pathology.”

“This research is serving two big purposes,” Wig said. “We are showing that brain network organization as measured using fMRI varies as a function of educational attainment. Secondly, those patterns we see in the images are predictive of dementia and its severity quite early — in some cases, years before symptoms appear.”

# Scholarship Fund Pays Tribute to Graduate's Memory



*Teresa Hawkins  
with her son,  
Ian Jasheway*

**Ian Vance Jasheway** loved a lot of things — playing “Magic: The Gathering,” volunteering with the elderly, competing with friends for excellence in swimming and schoolwork. He also enjoyed working in Dr. Bruce Gnade’s lab at UT Dallas, and learning how to be an intraoperative neurophysiological monitoring (IONM) specialist.

But it was his mother, **Teresa Hawkins**, who he described as “always my favorite person.”

When Jasheway died in August 2020, Hawkins and her family chose to honor his life by creating the Ian Jasheway Memorial Scholarship in Neuroscience at UT Dallas.

“Through the scholarship,” Hawkins said, “we’re hopefully helping educate students who will help others in the future. I want to help others because that’s who Ian was. This is a way for Ian to continue to be with us.”

The scholarship is awarded annually to a neuroscience student at UT Dallas with a 3.0 or higher. The first recipient, junior neuroscience student **Diane Bahena**, had the opportunity to meet Hawkins and learn more about Jasheway in August.

“All of Ian’s accomplishments were so impressive. Being the first recipient of this scholarship, I want to accomplish big things, too, to help continue Ian’s legacy and to inspire those who receive this scholarship in future years,” Bahena said.

Hawkins remembers Jasheway, the youngest of five boys, as someone who used his large stature to protect the more vulnerable, especially children.

“He was a defender of anyone who he thought wasn’t being treated fairly, or who didn’t have the physical or mental abilities to defend themselves,” Hawkins said.

Describing Jasheway as “not a well-behaved kid,” Hawkins says he became particularly interested in the effect of medications on young children, having been prescribed such medications himself.

“Ian believed very strongly that how we treat kids with emotional issues needs to change,” Hawkins said. “He wanted to be a psychiatrist who did more counseling than medication.”

The UT Dallas School of Behavioral and Brain Sciences appealed to Jasheway in part because the school offered both psychology and neuroscience. After transferring from Tarrant County College, Jasheway found his second home at UT Dallas.

“He could have been lost at a bigger university, but I felt like he was met with kindness and guidance and sincere concern at UT Dallas,” Hawkins said.

Through work study, Jasheway studied materials science under Gnade. He also became close friends with two classmates turned roommates. Together, they shared a three-bedroom home that became the de facto study space for all their friends.

Hawkins recalled a story of the roommates betting each other a steak dinner for whoever scored higher on an upcoming exam. They were all studying together, but as the night wore on, one of them said he was going to head to bed. “That’s great,” replied Jasheway, “I can taste the steak now.”

With graduation approaching, Jasheway applied to medical school and pursued additional certification, beginning his career in IONM.

“Ian liked making a difference and was proud of how important the role is in reducing the risk of serious complications during brain surgery,” Hawkins said.

Outside of work, Jasheway was swimming, spending time with family and continuing to teach others his favorite card game, “Magic.” He was also a skilled listener, Hawkins said: “Ian could tell when people needed to talk to someone. He would talk with the people passing out snacks at Costco.”

These friendships he cultivated from the many facets of his life proved comforting to Hawkins; at his memorial service, Hawkins said, “there were over 100 people there. 50 I knew; another 50, I didn’t even know. And many came to me and told me about how Ian had helped them. It was amazing to me.”

Finding a way to honor who Jasheway was and his plans for the future was something Hawkins, her five siblings and Ian’s brothers joined together to do. The family worked for two years, holding “Magic: The Gathering” tournaments and other fundraisers and securing corporate matching gifts, to create the Ian Jasheway Memorial Scholarship in Neuroscience.

“We wanted to help fund people getting educated in a field that would help other kids, when they’re having emotional problems, rather than just medicate them until they’re quiet,” Hawkins said. “It’s a small piece of him that lives on. It’s like Ian and who he was stays alive.”



*Ian Jasheway Scholarship inaugural recipient Diane Bahena with Teresa Hawkins*

# Faculty Grants

**Dr. Gregory Dussor** and his colleagues at the Center for Advanced Pain Studies (CAPS) have teamed up with the Marine Biological Laboratory (MBL), Yale School of Medicine and Tel Aviv University to pursue a new approach to localized chronic pain relief, backed by a \$6.8 million grant from the National Institute of Neurological Disorders and Stroke, a component of the National Institutes of Health (NIH).

The grant is part of the NIH's Helping to End Addiction Long-term (HEAL) Initiative, which was created to fund efforts to develop non-addictive analgesics and improve treatment for misuse of opioids.

The research team is focusing on a sodium channel called Nav1.7. Sodium channels are proteins in cell membranes that allow sodium ions into cells, creating electrical impulses in nerve and muscle tissue. Efforts to create a Nav1.7 blocker in pill form haven't yet panned out. Dussor and his colleagues have another strategy in mind: using a technique called site-directed RNA editing to alter the messenger RNA that carries the instructions to make the channel protein.

"We don't often get opportunities to work on a target like this that is so clearly validated in humans, where if you turn it off you don't feel pain, and if you turn it up, you feel too much pain," Dussor said.

**Dr. John Hart Jr.** received a \$2 million Department of Defense grant to research a noninvasive, nonpharmacological treatment to help people who have experienced traumatic brain injury (TBI) recover their ability to retrieve words.

The method uses high-definition transcranial direct current stimulation (HD-tDCS) to deliver low levels of electrical stimulation via electrodes in a cap placed on a person's head.

"Subjects barely feel it at all, and there are essentially no side effects," Hart said. "This method was shown in our last paper to help TBI patients retrieve words with an effect lasting eight weeks out from treatment."

In addition to lacking side effects, the treatment's advantages over drug-based therapies include the degree to which the method is focused on a specific area, as opposed to a pharmaceutical treatment that would blanket every area of the brain.

"While you're trying to regulate a lagging area, you might also disrupt an area that's healthy," Hart said. "If this method continues to be

effective, I think the future of this technology could be simply writing electrical prescriptions of dosage and region of the brain, based on the nature of the deficit."

**Dr. Sven Kroener** (upper left), received a five-year, \$1.7 million grant from the NIH's National Institute on Alcohol Abuse and Alcoholism to pinpoint the microscopic neurological changes caused by the regular presence of alcohol that impede recovery for people with alcoholism, and in the process, to learn more about the nature of addiction.

"These persistent neuroadaptations increase the motivation to seek rewards through alcohol, a desire to seek out the addictive substance escalates as someone tries to quit," Kroener said. "We're trying to provide a better understanding of the neurotransmission side of the compulsions that define addiction, to understand which neurons are relevant on the network level."

Kroener will use a technique called optogenetics, which uses light selectively to impede the activity of neurons, to examine changes in the medial prefrontal cortex of mice and deficits in cognitive function associated with alcohol use.

"We can select neurons to 'trap' during the drug-taking behavior," Kroener said. "Then, by activating or inhibiting the activity of those cells, we can see whether that influences the animals' behavior."

**Dr. Yune S. Lee** (lower left), received \$200,000 through an Intellectual Property Assignment/Sponsored Research Agreement to investigate noninvasive brain stimulation via sound to improve cognitive and sensory function. Lee also has an active three-year, \$411,000 grant from the National Institute on Deafness and Other Communication Disorders to investigate the use of rhythm therapy to understand the neural mechanisms underlying aphasia.

Lee will research the clinical effect of binaural beats, achieved when slightly different frequencies of sounds are played in the left and right ears. Lee will control the two frequencies so that the offset frequency will be in the gamma band range, above 30 hertz. Gamma waves are believed to be involved primarily in higher order cognitive functioning.

"When you feed your brain two different frequencies, the brain gets confused. It tries to resolve this discrepancy and generate a new third frequency," Lee said. "That offset frequency corresponds to the small mismatch of the two signals. That in turn is thought to oscillate the part of the brain that normally produces brain waves at that frequency."



Kroener



Lee

Combining cutting-edge analytic techniques and neuroimaging methods, Lee aims to lay the groundwork for understanding the impact of binaural beat on cognitive and language function.

**Dr. Christa McIntyre** and **Dr. Catherine Thorn** received a four-year, \$2.2 million grant from the National Institute of Mental Health to investigate whether vagus nerve stimulation (VNS) can accelerate recovery from emotional trauma in tandem with exposure-based therapy, the most common type of therapy for post-traumatic stress disorder.

In this new research conducted in animal models, the goal is to understand better how VNS enhances memory extinction and what neurological mechanisms mediate those effects. The goal is to shorten the duration and improve outcomes of exposure therapy, which is often effective but can be difficult for the patient.

"If VNS helps produce new memories of safe associations that are as strong as learned trauma associations, the benefit can last a long time," McIntyre said.

Exposure therapy involves a therapist guiding a patient to focus on the traumatic experience or details that trigger negative responses in order to create new, benign memories associated with those stimuli.

"Extinction learning requires repeated exposure to those reminders until the patient learns a healthier response," McIntyre said. "VNS has been preliminarily shown to promote this learning. We hope to identify the neurological mechanisms that engage during that process."

Assistant professor **Dr. Kendra Seaman** of the Center for Vital Longevity was awarded a \$560,000 grant by the National Science Foundation to research the psychological mechanisms and motivations that lead some older adults to make riskier financial decisions than younger adults.

Each year, more than 5% of older Americans are victims of financial fraud. While this is often attributed to age-related cognitive decline or misunderstanding of technology, Seaman suspects that changes in decision-making capabilities over time also reflect evolving priorities of older adults based on their life experiences. In particular, older adults seem more susceptible to financial fraud involves positively skewed risks: decisions involving options that juxtapose large but unlikely gains against small, likely losses.

Seaman and her collaborators are designing experiments around the hypothesis that older

adults' positive-skew bias — favoring the low-chance, high-reward scenarios — is driven by an increased focus on upsides in old age.

"One theory behind this is called 'positivity effect' in aging, which asserts that older adults tend to be drawn to positive information and remember it better than neutral or negative information," Seaman said. An example is remembering someone smiling rather than frowning.

A previous neuroimaging study by Seaman found both that older adults were drawn to positively skewed gambles more than younger adults, and that older adults were activating regions of the brain associated with cognitive control while looking at gambles with a large chance of a small loss.

"We're trying to see if that correlation is actually causation," she said. "How much of decision-making is due to either motivational changes or changes in context, compared to any kind of impairment?"

**Dr. Meghan Swanson** (right), has received a five-year, \$3.7 million grant from the National Institute on Deafness and Other Communication Disorders for a three-pronged, large-scale study on early intervention for language skills in children with autism.

The nationwide effort — including researchers from five other member institutions of the Infant Brain Imaging Study (IBIS) Network — seeks to identify language and communication risk markers for autism in infants, develop speech intervention strategies for caregivers, and use brain imaging to identify and monitor potential biomarkers for autism.

"More than a third of children with autism are either nonverbal or minimally verbal for their entire lives," Swanson said. "Even though this is no longer part of the autism diagnostic criteria, a large part of the population has significant language struggles. That's what this grant specifically targets — supporting skills in the domain of language."

The study involves 250 children ages 6 to 12 months considered to be at high familial risk for autism. Statistics indicate approximately 50 will later be diagnosed with autism.

"Autism is increasingly prevalent, and intervening before symptoms arise can improve outcomes, potentially improving quality of life and reducing the costs of lifelong care in profound cases," Swanson said. "But we need to establish the evidence for initiating intervention. Having a well-developed sample of home language recordings with longitudinal data will allow us to ask questions of that data in innovative ways."



Swanson

See all active research grants at [utd.link/grants22](https://utd.link/grants22)

# Student Features



**Aurora Rochin** has taken advantage of the opportunities provided her by the Research Experience for Undergraduates (REU) program hosted by the Center for Children and Families.

Rochin is among the dozen-strong first cohort for this 42-week paid internship designed to increase diversity in developmental psychology.

“The REU program has been the most foundational thing that led me to determine my future,” she said. “It’s really where I found my interest, my people and my passion. It helped me establish more of a connection with UTD, and also expanded on my skills as a leader, mentor, and working with students and people within the community.”

Rochin also became involved with the First Year Leaders (FYL) on campus, responding to the anxieties and uncertainties facing freshmen during the pandemic.

FYL is an Office of Undergraduate Education (OUE) initiative. The students are paired with assistant professors within their designated schools to help teach required freshman courses and provide mentorship outside of class.

“As advisors, we help students feel connected to the school and coach them when it comes to the sometimes-overwhelming process of acclimating to campus life.” Now into her second year with FYL, Rochin said, “It’s still my goal to help freshmen with their needs and give them the support whether online or on campus.”

Now in her senior year, Rochin has her sights set on entering UTD’s graduate program in speech-language pathology. She also wants to work in her community helping kids and parents.

Asked what’s in store for her future, she said, “I really love working with parents and kids and working on clinical issues. After that, I think I’d like to return to academia and get a PhD and do research because — there’s just so many questions I’ve had during my time at UTD. I’d feel more prepared.”



Into her fourth year with the cognition and neuroscience PhD program, **Melissa Lenert MS’19** received a significant boost from the National Institute of Health (NIH).

She was selected for an NIH Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) award, a two-phase (F99/K00) funding mechanism designed to support a graduate student’s transition to becoming an independent investigator.

After earning her BS in biology from Stephen F. Austin State University, she came to UTD to complete an MS in biotechnology supported by a Eugene McDermott Graduate Fellowship, a four-year program intended to attract the most promising doctoral students to UT Dallas.

“The D-SPAN award will support my research goals by providing resources and stability to transition to a postdoctoral position that will best support my goal of being a neuroscience faculty member and running my own laboratory, which will use translationally focused research to understand mechanisms of chronic pain in women,” she said.

Currently working in Dr. Michael Burton’s lab, Lenert studies the relationship between cellular metabolism and chronic muscle pain, and how a type of white blood cell called macrophages make chronic muscle pain better or worse.

“We hope to be able to modulate the activity of the immune system in order to change pain outcomes,” she said.

In the long-term, Lenert wants to help bridge the gap between preclinical and clinical pain research as an independent principal investigator where she can research and teach on a small scale of one or two students.

“I’m really passionate about neuroscience and trying to ultimately figure out how things work” she said. “Helping people in the end — that’s always the main goal.”

# Faculty, Staff, Student and Alumni Awards



Boynton



Brody



Swann

**Catherine Boynton BS'14** was named the 2022 Undergraduate Advisor of the Year by the University's Office of Undergraduate Education. The award recognizes an undergraduate academic advisor who demonstrates outstanding performance and dedication in advising undergraduate students.

**Dr. Salena Brody**, professor of instruction in psychology, was among five educators across the University honored with the annual President's Teaching Excellence Awards. She also was a recipient of the Aage Møller Teaching Award and the Teaching Resources Award this year. The teaching excellence awards committee receives hundreds of nominations every year and considers a broad spectrum of eligible candidates from across the University.

Neuroscience major **Breanna Shen** was among four UTD undergraduates selected for the Barry Goldwater Scholarship and Excellence in Education Foundation awards, receiving a scholarship of up to \$7,500. A National Merit Scholar and participant in the 2019 Clark Summer Research Program, Shen studies the mechanisms of chronic pain and the potential differences between men and women in the pain-transmission pathway.

See more student successes from the past year at [utd.link/students22](https://utd.link/students22)



Shen



Goffman



Lewter

Former University of Texas at Dallas student-athlete **Isaiah Swann BS'20** has been selected as one of 16 members on the NCAA Board of Governors as one of the first former student-athletes to serve on the board under its new constitution. While at UT Dallas, Swann was an infielder for the Comets baseball team and a Collegium V Honors graduate in neuroscience.

Professor **Dr. Lisa Goffman** was selected as one of 11 recipients of the 2022 American Speech-Language-Hearing Association Honors of the Association Award, the highest honor granted by the organization. This honor recognizes members for their contributions to communication sciences and disorders, focusing on those showing a career of innovative clinical practice, insightful and rigorous research, creative administration, effective legislative activity, outstanding teaching or other distinguished professional contributions.

Neuroscience research associate **Dr. Lakeisha Lewter** was selected as a fellow of the Burroughs Wellcome Fund's Postdoctoral Diversity Enrichment Program (PDEP). The program provides \$60,000 over three years to support career development activities and biomedical research for underrepresented minority postdoctoral fellows.

# Retirements

## Roeser Retires After Half-Century at Callier



In March, Dr. Ross Roeser (center) received a gift from UT Dallas President Richard C. Benson (right) during a ceremony that honored his 50 years of service. BBS Dean Steven Small also attended.

Executive director emeritus **Dr. Ross Roeser** spent 50 years at the Callier Center for Communication Disorders, developing and providing leadership in the audiology program and molding the audiology doctorate offering from its beginning.

The Lois and Howard Wolf Professor in Pediatric Audiology and longtime BBS faculty member, Roeser retired May 31 and is now professor emeritus.

Roeser's research and leadership helped define and expand the scope of practice for audiologists worldwide. UTD's audiology doctoral program is now ranked No. 2 nationally by *U.S. News & World Report*. Nevertheless, Roeser said he is most proud of promoting universal neonatal screening and developing Callier's cochlear implant program.

"I began my audiology career at a time when the identification of a child who was profoundly deaf meant that he or she would be sent to a state school for deaf children," he said. "To see how cochlear implants have transformed lives has been beyond anyone's prediction."

Earlier this year, Roeser received the Aram Glorig Award — named for the founding director of the Callier Center — from the International Society of Audiology, in recognition of his distinguished career, which included service on the Food and Drug Administration panel that approved cochlear implants for children and adults.

"Dr. Roeser's importance to the clinical and educational mission of the School of Behavioral and Brain Sciences must not be underestimated," said Dr. Steven Small, dean of BBS and the Aage and Margareta Moller Distinguished Professor in Behavioral and Brain Sciences. "Our elite audiology graduate program stands on the strong foundation he built."

Angela Shoup BS'89, MS'92, PhD'94, the Ludwig A. Michael MD Executive Director of Callier and one of Roeser's hundreds of students over the decades, said that Roeser's far-reaching impact is apparent.

"His hands-on approach to education allowed him to mentor his students and thus touch the lives of countless patients with hearing disorders," she said. That commitment will continue with the Ross Roeser Fellowship in Audiology, an endowment supporting audiology students who demonstrate academic and clinical excellence as well as financial need.

By the time Roeser earned his PhD, he was already working as a Callier Center audiologist. The next year, he was asked to lead the audiology program. Over 16 years, he molded it into the beginnings of what it is today: a highly sophisticated diagnostic and treatment program for those with hearing and balance disorders.

"Then in 1988, there was a national search for the right person to oversee operations of the entire Callier Center," Roeser said. "At the end of the process, the administration came to me and said, 'You're the natural, why don't you just take it?'"

At the end of his tenure as Callier executive director, Roeser contemplated retirement.

"Dean Bert Moore said, 'Well, we need to recruit a new head of the audiology program. Why don't you do that for a couple of years?' And I did that for a decade," said Roeser, who cited Moore, the longtime BBS dean, among the greatest, highly valued and influential people on his career at UT Dallas.

The decision to postpone retirement was simple, Roeser said.

"Audiologists are 'people people.' We're in this profession because we see how we can help people. Since entering the profession, unimaginable advances have been made in the technology and the ability to help people — it has been phenomenal," he said.

Roeser's impact extended far beyond the University as one of the founders of the American Auditory Society in 1972 and its journal *Ear and Hearing*, for which he was the first editor-in-chief, and as one of the founders of the American Academy of Audiology in 1988.

## Profile: Dr. Hanna Ulatowska



*Dr. Hanna Ulatowska*

"I'm a traditional European — we don't usually talk about ourselves," said professor emeritus of communication disorders **Dr. Hanna Ulatowska**, when asked to reflect on a career that has touched the lives of many students from around the world.

Aug. 31 marked the end of Ulatowska's research and teaching career, which brought her to UT Dallas in 1973. She will receive the Association of College Unions International's Emeritus Award, a distinguished honor in recognition of her dedication and exceptional service.

Born in Warsaw, Poland, Ulatowska has lived in the U.S. for 50 years. A survivor of the Auschwitz concentration camp, she has devoted her life to research and studying various disorders related to trauma, studying recovery from such trauma, aphasia, neurolinguistics and Alzheimer's.

Ulatowska has worked with World War II survivors in their 80s and 90s who experienced the atrocities of the concentration camps and carnage-laden battlefields. Over the years, these survivors carried the pain, graphic images and jarring sounds of war. Through her work, she's helped them recover their inner peace while counseling them how to release the trauma that's been trapped inside them.

She wraps up the year with her last class — working with a group of eight foreign volunteer professors who traveled from India, Mexico, Syria and New Zealand to study and do research with her. She has assigned each of them to study their families and culture from the inside out.

The professors meet twice a week to share different aspects of their findings. They compare their ideas and opinions about medicine, rejection of doctors in preference of family members, importance of food in their respected cultures and perceptions on aging within

each family. The notion is to observe, explore and relate the findings so they can understand the different cultural tenets of treatment.

When asked about her contributions to the School of Behavioral and Brain Sciences and what she's most proud of, Ulatowska cited "the unique study and recovery from trauma, the trauma that covers the world — all the countries."

During the pandemic, Ulatowska taught class on the aging brain, and spoke of the strong academic work that those students produced.

"I asked my students who were speech pathologists to go to their families and study their grandparents. All the students had grandparents who had dementia," she said. "In my long life at UTD, these were some of the best papers, because they see the trauma that hits the country, especially in the U.S. where people live longer with dementia. What do you do? The students were very glad they could do it. I found their research fascinating."

When it comes to the increasing use of technology in the field, Ulatowska is not impressed. "I see the emotion or human component disappearing, and it's very important — it's not human-oriented anymore," she said. She believes there are nurse practitioners who do a better job working with patients, asking important questions about their symptoms. She believes physicians rely on using technology to find answers without acknowledging the human component.

When asked what the future holds for BBS and UTD, Ulatowska said she believes she has put together a teaching program and a body of research that will help students have a better understanding of how to help people of all nations live with — and heal from — traumatic disorders so that they may find transformational recovery.

# Grant Programs Guide

## Underrepresented Students into BBS Roles

Two externally funded programs have been created in the past year to help bring underrepresented students into neuroscience and developmental psychology research. The [Enhance Neuroscience Undergraduate Research Experiences \(ENSURE\)](#) program began with a two-year, \$900,000 grant from Communities Foundation of Texas' W.W. Caruth, Jr. Fund to expand neuroscience research opportunities for underrepresented undergraduates. Meanwhile, the [Center for Children and Families](#) (CCF) hosted a [Research Experience for Undergraduates \(REU\)](#) site, a 42-week paid internship facilitated by a National Science Foundation (NSF) grant.

The REU was designed to provide a cohort of UT Dallas and Dallas-area community college students from historically underrepresented groups the knowledge, skills and connections to perform developmental psychology research while also reaching out to the community. Beyond the NSF funding, additional support allowed the program to expand to 12 participants.

"We need diverse voices in developmental science; our research benefits from it," said Dr. Mandy Maguire, associate professor of speech, language and hearing and

principal investigator for the REU site. "As we give great students from many different backgrounds better opportunities, and promote that next generation of scientists to fill that gap, we're also diversifying the science. That research becomes so much better."

In the fall, students got hands-on experience through Play With Me (Juega Conmigo), a CCF community-based outreach program serving young, at-risk children and their parents. In the spring, the focus shifted to conduct culturally sensitive studies of children's development. The summer consisted of analysis and interpretation of data and reporting findings.

"Students completed the program by presenting their data from their individual projects at the SPUR undergraduate research fair," Maguire said. "A number of the outstanding posters were submitted to the bi-annual conference for the Society for Research in Child Development which will be in Salt Lake City next March."

Adriana Villa Baird, Play With Me program director and community liaison specialist, said a typical undergraduate experience often does not involve firsthand opportunities.

"Past Play With Me participants

have told me that, with this opportunity to connect with members of the community, they have become more comfortable and more confident in interacting with parents," she said.

A second cohort of 12 students is taking part in the program's second year. Maguire said minor tweaks have been made to the program, which she regards as an "incredible success."

"The students seem to have really, really enjoyed it and learned a lot. We hope to make UT Dallas a beacon for doing important, culturally sensitive research and creating that pipeline of scientists that go on to top-tier graduate schools across the country and become the next generation of scientists," she said.

The ENSURE program's 12 local sophomores and juniors are receiving research training and professional development led by three neuroscience faculty members associate professor Dr. Benedict Kolber, assistant professor Dr. Michael Burton, and assistant professor of instruction Dr. Anna Taylor.

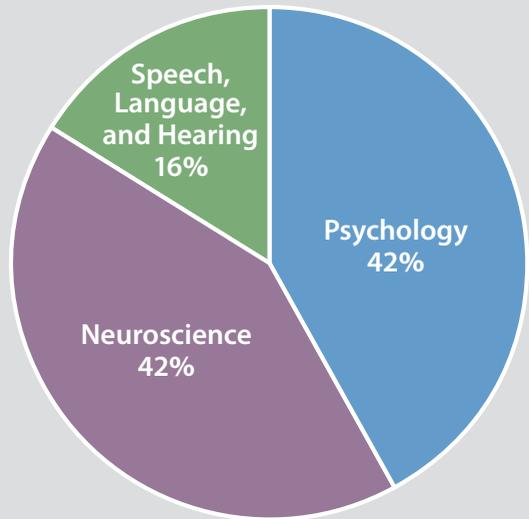
Beginning with fall 2022, participants are conducting neuroscience research during four academic semesters for 10 to 15 hours per

*Dr. Mandy Maguire (front row, left) poses with students from the Research Experience for Undergraduates program hosted by the Center for Children and Families.*

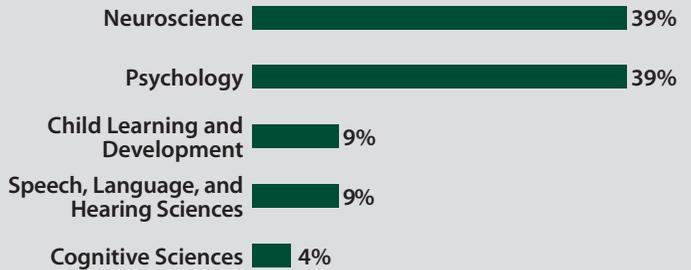


# BBS Enrollment

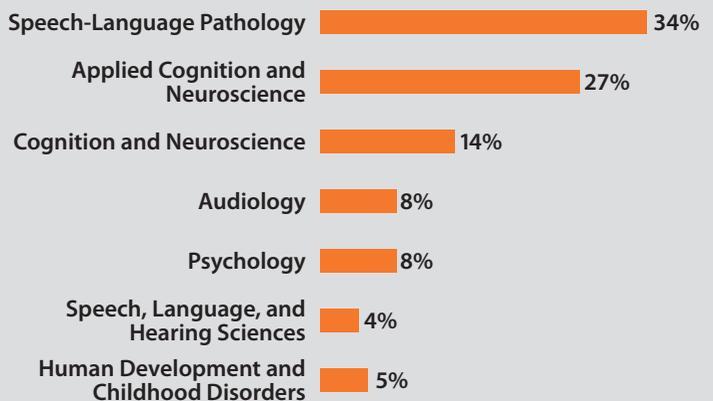
## Enrollment by Department



## Undergraduate Enrollment by Major



## Graduate Enrollment by Major



week, as well as during full-time summers, while also receiving professional development, attending seminars and presenting their research at on-campus symposiums and off-site conferences.

“The lab is where a lot of the essential training will happen, though we’re supplementing it with other workshops,” Taylor said. “The best way to get ready to be a research scientist is working at the bench every day and learning from the people around you.”

Kolber mentioned that the volume of UT Dallas graduates who make long-term homes in the Dallas-Fort Worth area makes the program perfectly aligned with the foundation’s goal.

“We want to identify students that intend to stay, get them into programs and enable them to contribute intellectually to the region,” Kolber said. “While the fellows do research and learn about scientific writing and presenting, they also learn what they need to do professionally to get to medical school or graduate school.”

Diverse students have so much to offer, Taylor said, because they bring new voices to the table.

“As scientists, we may be unable to ask certain questions because we haven’t even thought of them,” she said. “Having someone come in and ask a question you’ve never considered before — that is what moves science forward.”

*“We hope to make UT Dallas a beacon doing important, culturally sensitive research.”*

**Dr. Mandy Maguire**

# Affiliated Centers

*Research centers play an important role in the research and educational mission of the School of Behavioral and Brain Sciences (BBS). BBS faculty lead six different research centers at UT Dallas, all of which are integral to the mission of the school. These extraordinary research environments provide laboratory space and/or intellectual ecosystems for almost half of our faculty, and training grounds for the majority of our doctoral students. They also provide hands-on research training for undergraduate students, particularly in our three largest majors: neuroscience, psychology, and speech, language, and hearing sciences. These centers cement the national and international reputation of BBS for groundbreaking research in speech, language and hearing; sensory neuroscience and pain; brain health; children and families; cognitive and brain aging; and neuroplastic therapeutics.*



**CALLIER CENTER**  
FOR COMMUNICATION DISORDERS

The [Callier Center for Communication Disorders](#) has transformed the lives of children and adults with speech, language and hearing disorders for more than half a century. With BBS faculty educators and researchers, Callier is one of a select few communication disorders centers in the nation that combine clinical care, graduate student training and research within one institution. These three pursuits — treatment, training and research — collaborate to transcend the norm and ensure the best outcomes for people with communication disorders.

In 2020, the audiology graduate program based at Callier was tied for second in the nation by *U.S. News & World Report*, the highest-ranked UT Dallas program this year. The speech-language pathology program was tied at No. 10 in the country.

## Center for Advanced Pain Studies

The [Center for Advanced Pain Studies](#) pursues lines of research aimed at alleviating suffering from pain and improving the lives of people with chronic pain and/or migraine. Its faculty investigate fundamental mechanisms underlying these issues, working to discover novel therapeutics through academic, public and private partnerships.

The center serves as a launching pad for entrepreneurship and innovation, while also drawing together investigators across disciplines ranging from neuroscience, molecular biology, bioengineering, chemistry, and neuroengineering to advance discoveries, translate findings, and foster the next generation of multidisciplinary scientists pursuing pain research.



## CENTER for BRAINHEALTH

The [Center for BrainHealth](#) is a research center investigating the healthy brain and the effects of injury and disease. Founded in 1999 to maximize the cognitive potential of people of all ages, its multidisciplinary team aims to understand, protect, and improve brain function through research and experimental therapeutic training programs.

Faculty and students from BBS working in the center use functional and structural neuroimaging techniques to better understand the neurobiology of cognition and emotion in health and disease.



The [Center for Children and Families](#) focuses on providing families with child development education and support via research, outreach, and service. Founded in the fall of 2008, the center designs and implements programming that emphasizes child developmental science, provides professional training in early intervention, and studies the effectiveness of those methods.

The success of the center's services rests upon faculty research, based on a wide range of biological, cognitive, language, social-emotional, and cultural areas of development. This advanced knowledge and expertise directly impacts the outreach programs. UT Dallas students also gain academic and hands-on experience assisting in programs.



## CENTER FOR VITAL LONGEVITY

The [Center for Vital Longevity](#) pursues research on how and why cognitive abilities change with age and how these changes relate to changes in the brain's structure and function. Since 2010, its scientists have aimed to identify, as early in life as possible, brain markers that predict who is likely to maintain cognitive health and who is most at risk, with the goal of developing behavioral and cognitive interventions that can prevent, slow or even reverse age-related cognitive decline.

Its research scientists use advanced brain imaging and other human imaging technologies to understand, maintain and improve the vitality of the aging mind, studying impairment and diseases such as Alzheimer's and other forms of dementia.



The [Texas Biomedical Device Center](#) is a collaborative multidisciplinary effort to develop technologies that prevent injuries, detect impairments, and restore quality of life lost due to neurological injuries and disease. Since 2012, its researchers have been committed to the development of affordable and innovative therapies and technologies to relieve neurological injury.

TxBDC scientists investigate the effects of these treatments on beneficial neuroplasticity for a number of neurological disorders including tinnitus, stroke, PTSD, multiple sclerosis, phantom limb pain, spinal cord injury, and peripheral nerve injury.

# Advisory Council Formed to Assist in BBS Strategy

In fall 2021, civic and business leaders from the Dallas community formed the School of Behavioral and Brain Sciences' first advisory council, charged with providing insights and strategic advice to school leadership and sharing BBS's work with the community.

**The council has seven founding members**, each with significant service and experience in BBS's areas of focus, including speech, language and hearing, aging, Alzheimer's disease, child development, mental health and pain:

- **Stacey Jones Angel**, president and managing partner, Liberator Emerald Holdings LP
- **Bennett Cullum**, estate planning attorney, retired, and volunteer educator
- **Pagett Gosslee**, director of development, retired
- **Cindy Marshall**, medical director, Baylor AT&T Memory Center
- **Nancy M. O'Neil**, partner, C C Slaughter Farms
- **Gail Plummer**, chairman emeritus and co-founder, Altair Global
- **Philip J. Ritter**, senior fellow, Meadows Mental Health Policy Institute

"I am grateful to each of these leaders for their willingness to help the School of Behavioral and Brain Sciences," said BBS Dean Dr. Steven Small, who works directly with members of the council. "Through their advocacy, service and support, we will reach new audiences and continue to expand our research capabilities and educational opportunities for students."

Cullum, an advisory council member and longtime friend of UT Dallas, praised the dean's role in the growth of the school.

"Dean Small's entrepreneurial leadership, combined with the creative energy of the faculty of the school's departments and centers, is transforming the School of Behavioral and Brain Sciences into a place of prominence in research, teaching, and clinical services," Cullum said. "With my family's long-term connection to UT Dallas and its predecessor institutions, the Advisory Council gives me an opportunity to observe the fast-paced development of this critical component of UTD in its historical context, and to work with professionals and volunteers in achieving the goals of the school."

Gosslee served as the first director of development and alumni relations for the school from 2009 to 2019, and is a 1979 graduate of the school, then known as the School of Human Development.

"It is a true honor to now serve on the first BBS advisory council," she said. "The best is yet to be."



*Dr. Lisa Goffman with Bennett Cullum*



*Nancy M. O'Neil with Pagett Gosslee*

# Research Roundtable

BBS Advisory Council member Dr. Cindy Marshall and her husband, Dr. Duc Tran, opened their home on May 25 to host a reception and conversation about Alzheimer's disease and current research in the school. Marshall is medical director of the AT&T Baylor Memory Care Center and regularly sees first-hand the effects of the disease. The evening's speaker was Dr. Kristen Kennedy, who presented her recent work on the degradation of white matter in the brain and its associated impact on financial decision-making capacity in mild cognitive impairment and Alzheimer's disease.

"Dr. Kennedy's research is right at the forefront of helping to expand what we know about Alzheimer's disease and other dementias," Marshall said. "I always learn something new when talking with her, and loved the opportunity to do so from the comfort of my own living room."

"Duc and I really enjoyed hosting friends of BBS for this discussion. The school made it easy, taking care of most of the details, and it was great to get together with others to talk about a subject in which we all have an interest," she added.

The event was the first in what is anticipated to be a series of discussions about current research on special topics in which BBS faculty have particular expertise, with an opportunity for participants to engage in conversations and ask questions of experts on that topic.

*If you're interested in hosting a research event at your home or place of business, please contact Michael Gute, director of development and alumni relations for the School of Behavioral and Brain Sciences, at [michael.gute@utdallas.edu](mailto:michael.gute@utdallas.edu).*



*From left: Stacey Angel, Jack Broyles and Gail Plummer*

*"We really enjoyed hosting friends of BBS for this discussion. The school made it easy, taking care of most of the details, and it was great to get together with others to talk about a subject in which we all have an interest."*

**Dr. Cindy Marshall**

# Selected Publications from the 2021-2022 Academic Year

**Ackerman, Robert and Pinkham, Amy:** Badal, V. D., ..., Ackerman, R. A., ..., & Pinkham, A. E. (2022). Confidence, accuracy judgments and feedback in schizophrenia and bipolar disorder: A time series network analysis. *Psychological Medicine*, 1–10.

**Basak, Chandramallika:** Qin, S., & Basak, C. (2022). Fitness and arterial stiffness in healthy aging: Modifiable cardiovascular risk factors contribute to altered default mode network patterns during executive function. *Neuropsychologia*, 172, 108269.

**Burton, Michael:** Tierney, J. A., ..., & Burton, M. D. (2022). High-fat diet causes mechanical allodynia in the absence of injury or diabetic pathology. *Scientific Reports*, 12(1).

**Engineer, Crystal:** Riley, J. R., ..., & Engineer, C. T. (2021). Auditory brainstem responses predict behavioral deficits in rats with varying levels of noise-induced hearing loss. *Neuroscience*, 477, 63–75.

**Holub, Shayla and Nelson, Jackie:** Nelson, J. A., & Holub, S. C. (2022). Mothers' and fathers' perceptions of daily mealtime coparenting. *Appetite*, 168, 105757.

**Huxtable-Jester, Karen:** Cruz, L., Huxtable-Jester, K., et al (2021). Place-based educational development: What center for teaching and learning spaces look like (and why that matters). *To Improve the Academy: A Journal of Educational Development*, 40(1).

**Jahn, Kelly:** Jahn, K. N. (2022). Clinical and investigational tools for monitoring noise-induced hyperacusis. *The Journal of the Acoustical Society of America*, 152(1), 553–566.

**Kennedy, Kristen and Rodrigue, Karen:** Hoagey, D. A., ..., Rodrigue, K. M., & Kennedy, K. M. (2021). The effect of vascular health factors on white matter microstructure mediates age-related differences in executive function performance. *Cortex*, 141, 403–420.

**Kilgard, Michael, McIntyre, Christa, and Rennaker, Robert:** Souza, R. R., ..., McIntyre, C. K., Rennaker, R. L., ..., & Kilgard, M. P. (2021). Vagus nerve stimulation enhances fear extinction as an inverted-U function of stimulation intensity. *Experimental Neurology*, 341, 113718.

**Kolber, Benedict:** Miller Neilan, R., ..., & Kolber, B. J. (2021). Agent-based modeling of the central amygdala and pain using cell-type specific physiological parameters. *PLOS Computational Biology*, 17(6).

**Lee, Yune:** Kim, H. W., ..., & Lee, Y. S. (2022). Sensorimotor and working memory systems jointly support development of perceptual rhythm processing. *Developmental Science*.

**Rollins, Pamela:** Rollins, P. R., & De Froy, A. M. (2022). Reexamining pathways early autism intervention in children before and after the third birthday: A randomized control trial. *Journal of Autism and Developmental Disorders*.

**Seaman, Kendra:** Seaman, K. L., et al (2022). Temporal discounting across adulthood: A systematic review and meta-analysis. *Psychology and Aging*, 37(1), 111–124.

**Su, Pumpki Lei:** Su, P. L., et al (2022). Dual language profiles in Spanish-speaking English learners. *Journal of Speech, Language, and Hearing Research*, 65(7), 2608–2628.

**Swanson, Meghan:** Girault, J. B., ..., Swanson, M. R., et al (2022). Infant visual brain development and inherited genetic liability in autism. *American Journal of Psychiatry*, 179(8), 573–585.

**Wig, Gagan:** Chan, M. Y., ..., & Wig, G. S. (2021). Long-term prognosis and educational determinants of brain network decline in older adult individuals. *Nature Aging*, 1(11), 1053–1067.

See more faculty achievements from the past year at [utd.link/faculty22](https://utd.link/faculty22)



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