New Frontiers
RESEARCH AND CREATIVE ACTIVITY AT THE UNIVERSITY OF NEBRASKA AT KEARNEY

The View From Here
DAVID VAIL
CELEBRATING 11 YEARS OF RESEARCH AND CREATIVE EXCELLENCE
As the University of Nebraska at Kearney community prepares to welcome 2019, the theme that dominates our conversations and campus landscape is “momentum.” Construction fence is a fixture all across campus. More important, however, are the obvious strides we are taking in advancing our research agenda and impacts.

We see the new STEM building taking shape adjacent to West Center. Active construction on the project began this summer, and the excitement grows each day as the structure rises. From a faculty research and teaching standpoint, we cannot overstate the significance of the positive change that this Otto Olsen replacement building will have on the University. Faculty from physics and mathematics, industrial and cyber technologies – from all disciplines in science, math, and technology research and teaching – will become more collaborative and integrated.

Across Highway 30, in University Village, other new and exciting projects have been, or soon will be, completed. The opening of the Village Flats residence complex in July is providing a more welcoming place to live for upperclass students, graduate students and visiting scholars. In October we broke ground on the new LaVonne Plambeck Early Childhood Education Center, which will become a model for early childhood education and increase the prominence of our College of Education.

As we watch the progress, it is clear that every step forward increases UNK’s impact on students, the Kearney community, the State of Nebraska and the entire region. Faculty research, scholarship and creative activity provide the foundation of our teaching, and inspire not only our students, but people across the state, the region and the nation.

In addition to the construction projects that signal our momentum and investment in the future, we also celebrate our success in advancing the University’s research profile. The output and impact of our faculty research is evident in dollars awarded and grant applications submitted. Under the leadership Assistant Vice Chancellor for Research Richard Mocarski, UNK recorded $1.8 million in awards from 66 submissions in 2014. Over the next four years, the amount of funding increased to $4.6 million in awards from 144 submissions in 2018 (down slightly from an all-time high of $5 million and 150 submissions in 2017). These research dollars are a significant underlying part of the eight stories featured in this 11th issue of New Frontiers.

As you page through this magazine, I hope you will be inspired by what you find. These eight stories represent only a fraction of the collaborative research and creative activity being conducted by our faculty. Through discovery, commitment, enhanced teaching and scholarship, they are crossing disciplines, they are creating momentum, and they are sharing their knowledge every day with students inside and outside of the classroom.

It’s a great time to be part of the UNK family!
Welcome to New Frontiers 2018

The goal of New Frontiers is captured in its title, as we aim to display the uncharted expanses that faculty of the University of Nebraska at Kearney explore.

Faculty from across UNK are actively changing their fields with advances in research and creative activity. These advances are central to what makes UNK unique. As outlined in many of the stories in this issue and past issues, students are vital to our faculty’s work. This vitality is felt through the students who staff the labs and studios of faculty, and those in their classrooms who inspire them to keep pushing boundaries. Beyond student impacts, UNK faculty continue to enhance the university as a whole, their fields of study and the world. Within the pages of this 11th issue, we highlight eight faculty as they push the boundaries of their fields and cross borders of disciplines.

Sharon Obasi displays UNK’s propensity for working across traditional disciplinary boundaries. Her new line of research in namesaking and her partnerships across the university are as unique as her path from neuroscience to family studies.

David Vail’s work to uncover the ways in which agribusiness – specifically agricultural aviation and pesticide delivery – shapes the landscape is unique and groundbreaking from his historical perch.

Allen Thomas’ use of organic chemistry in medicine for cancer and neurological disorders is groundbreaking on its surface, and his work is even more innovative through his commitment to a team-based approach that crosses disciplines and utilizes advanced computational expertise.

UNK faculty are always looking to situate their work in the context to best leverage their work for public good. This theme is central to Michelle Warren’s founding and spearheading of the International Film Series, which brings important international issues to Kearney and beyond.

Todd Bartee’s work underscores the importance of working with the community to have a real impact. His work to combat health disparities in rural spaces with community members is leading to better lives for people in the Great Plains.

Greg Broekemier has shaped his research by analyzing real-world problems and involving students every step of the way through hands-on class marketing projects. His flexibility has allowed him to better understand everything from customer satisfaction in the mortuary business to a market analysis of a free health care clinic.

Finally, Megan Hartman and Jia Huang demonstrate the ways in which UNK faculty are pioneering in their fields of study and how these efforts impact their students and the world.

Megan’s analysis of Old English, Old Norse and Old Saxon poetry, with a specific emphasis on meter, is helping us better understand the ways ancient works were meant to be heard and read. This leads to more nuanced understanding of an author’s intent, which she has been able to link to current trends in popular culture, which excite her students.

Jia Huang’s work in discrete mathematics grounds, the often abstract, mathematical research in the real world. Huang’s research is interested in problems with answers that can be linked to real-world problems.

The work of these eight faculty members covers an extraordinary amount of terrain and highlights the impressive research and creative activity on UNK’s campus. These faculty continue to build upon the remarkable foundation laid by those who came before them by continuing to explore new areas. I am sure that their explorations will be inspiration for their students and the next batch of UNK faculty and scholars.

I am excited to be spearheading New Frontiers for the first time. It is an honor to continue this important work started by Kenya Taylor and John Falconer. I have taken great joy and inspiration ushering in this issue. UNK faculty never cease to amaze me, and I hope you share in my excitement for the work represented in this issue.

Richard Mocarski
Assistant Vice Chancellor for Research
Sponsored Programs & Research Development
New Frontiers

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Curing Cancer

Allen Thomas aims to better treat brain diseases

By KIM HACHIYA

Diseases that attack the brain are particularly difficult, if not impossible, to treat.

Brain cancer has just a 34.7 percent five-year survival rate, and Alzheimer’s disease kills many it afflicts. Part of the reason why is that the brain has a defense mechanism, the “blood-brain barrier,” that protects it from harmful chemicals, bacteria and viruses. That barrier also keeps out substances that could kill cancer cells or sweep away plaques and tangles from an Alzheimer’s patient’s brain. Finding a way to penetrate that blood-brain barrier is a high priority for scientists.

Allen Thomas, an associate professor of chemistry at the University of Nebraska at Kearney, leads a team of undergraduate student scientists in his work to develop specific molecules that will cross the blood-brain barrier and perhaps serve as carriers for other chemicals that can treat brain diseases.

Thomas, in his fifth year on the UNK faculty, has a three-year, $400,000 grant from the National Institutes of Health to fund this work. He has spent his career in the field of medicinal chemistry because he enjoys making functional molecules.

“Research is important in chemistry; you cannot learn all of it just by reading textbooks or listening to lectures.”

Molecules, he explains, are atoms that have been joined together by reactions to create bonds. Hundreds of thousands of chemical reactions create varieties of bonds, he said. Thomas is particularly interested in using molecules to better understand a transporter protein called LAT1 (L-type amino acid transporter) that shows promise serving as a sort of drug mule, traversing the blood-brain barrier and potentially carrying specific chemicals that could kill cancer cells.

Transporters are important because brain capillaries, which carry blood, are separated from brain cells by a semipermeable membrane that is selective about what gets through. There is a very narrow range of molecules that can penetrate this membrane, which is why therapeutic drugs for various brain diseases are so difficult to develop. LAT1 is highly expressed in the blood-brain barrier, where it acts as a carrier for natural amino acids.

“The chemistry part,” Thomas said, “is determining how to attach transportable amino acids to drugs, and which drugs would be suitable for LAT1 transport. There are limitations based on the size of the transporter and how big the drug molecules can be in order to travel through it.”

COLLABORATIVE PROJECT

Thomas collaborates with a world-renowned scientist in transporter biology at the University of California San Francisco, Kathleen Giacomini, and a computational modeling expert, Avner Schlessinger, at the Icahn School of Medicine at Mt. Sinai Medical Center in New York. Giacomini tests all the compounds Thomas’ team creates. Schlessinger develops computer models that predict the potential for molecules to interact with the transporter. Computer programs can simulate what might be happening in cells, but, Thomas notes, simulations are a guide and not absolutely reliable.

“We have many examples of molecules transported by LAT1 that models cannot explain. They offer a possible answer and they allow you to generate a hypothesis of ‘there’s this space on an amino acid that might work for attaching a drug.’ Then we go in the lab and synthesize that amino acid-drug conjugate to see if it does work. The models are not based on human transporters but on bacterial structures, which are the best available to us right now. They aren’t perfect, and because proteins are not static, we need to test compounds in cells to be sure.”

When Thomas creates a compound, he sends it to Giacomini in San Francisco, where she has engineered cells to express high levels of LAT1; she checks whether the compounds are getting into cells via that particular method of transport and this gives a high degree of confidence in the mechanism, Thomas said.

“We know that our compounds are attracted to and are binding with the transporter, and she can tell if it actually is working because LAT1 is an ‘exchanger,’ meaning the amino acids inside and outside the cells exchange with each other. Her cells will release a radioactive amino acid marker if our compound gets in. It tells us if it’s being transported. It’s a state-of-the-art novel experiment.”
PREVIOUS WORK

This research builds on work Thomas did prior to joining UNK. For 14 years after earning his doctorate from The Scripps Research Institute, he worked for a startup company in Boulder, Colorado, doing similar work looking for potential therapeutic compounds for Alzheimer’s treatments. While the “holy grail” would be to find compounds with commercialization potential, Thomas knows that’s a long shot, almost like winning the Powerball lottery. The failures are much more frequent than the hits, he notes.

Thomas joined the private sector after graduate school, lured by the salary and location. But there was always a sense of regret for leaving academe. While at the Boulder company, he found himself enjoying the teaching and mentoring of junior scientists and associates. He notes now that his doubts about his career path may have held him back, as he wasn’t really able to go all-in and fully commit to the industry. Eventually, he dipped his toes into teaching, accepting an adjunct position at the Community College of Denver. When the opportunity arose at UNK, he dove in.

At Boulder, part of his work focused on making molecules to treat Alzheimer’s disease. While working on that project, he began to learn about transporter proteins that could be used to deliver drugs to the brain. While industrial research works toward specific outcomes and applications, he said, academic research is more “basic,” looking to answer big questions about why and how things work.

MAKING AN IMPACT

Now in the second year of the three-year grant, Thomas said his team has made considerable progress in understanding what they can, and cannot, do. “We really have learned a lot about the types of molecules that can be transported,” he said. “In the next two years, our focus will look more at the drug molecules, and connecting them to amino acids, for transport by LAT1, and to see if they have positive effects on killing cancer cells and are able to cross the blood-brain barrier in rodent models.”

The scientific challenges remain intriguing, as do the new opportunities provided by teaching. This “basic” research is ideal for students, he said. It gives them opportunities to learn lab skills while working on real problems, not just workbook experiments. And it helps undergraduates learn important critical-thinking, presentation and writing skills, along with intellectual growth and a chance to hone their career goals.

“My job is to reach out to each student to help them succeed.”
One of his former students started medical school at the University of Nebraska Medical Center in summer 2018; his original plan was to earn a Doctor of Medicine degree, but now he’s enrolled in a dual M.D./Ph.D. program with an eye toward medical research. This student scored in the top 99th percentile on his medical aptitude exam (MCAT). Thomas said the student changed his career plans toward research after working in his group for two years.

“I think we do a good job here,” he said. “We have a phenomenally high acceptance rate for professional and graduate schools. Within the last five years, UNK chemistry students have had an incredible 93 percent acceptance rate to medical schools.”

Thomas enjoys talking with students about science, helping them think critically about what they are doing, creating and testing hypotheses, and analyzing and interpreting the results.

“We have a phenomenally high acceptance rate for professional and graduate schools.”

“Research really does that for you; it helps you become a scientist and develop that habit of thinking,” he said.

Thomas took his entire nine-member undergraduate team to an American Chemical Society meeting in fall 2018 to present their findings.

“This ability to present your work to your peers is really an important component of educating students,” he said.

CLASSROOM EXPERIENCE

The jump to academe presented challenges for Thomas, who had to explore the psychology of teaching and how to communicate to a classroom of students for 50 minutes three times a week. Students come with a variety of backgrounds, he notes, from those who experienced advanced placement chemistry in high school to those whose experiences were not as rigorous.

“My job is to reach out to each student to help them succeed. I feel like I am a fairly serious person, which sometimes makes me seem less approachable to students. I need to find a balance between that tendency and not scaring them,” Thomas said. “My goal is that they take the science and the work seriously, but also for them to not dread taking my class. I want them to enjoy it as much as I do.”
UNK’s chemistry department is collegial and collaborative, according to Thomas. “All of us believe in rigorous coursework and classroom and lab experience where students learn and demonstrate competency,” he said. “Research is important in chemistry; you cannot learn all of it just by reading textbooks or listening to lectures.”

Faculty in the chemistry department rotate through teaching different types of chemistry courses, depending on their expertise. This helps keep teaching fresh and provides everyone opportunities to mentor students at different grade levels. In any given semester, Thomas may be teaching a course in general chemistry, organic chemistry or seminar where students learn more about making presentations and being a scientist. Additionally, Thomas has mentored chemistry students conducting research for college credit, for which they write a research report and learn how to use specific and technical language.

Thomas also has taught a popular class called brewing science, which focuses on the science of brewing beer and spirits. Students learn about the molecules that give beer its color, flavor and body. And, of course, they learn about the effects of the molecule most associated with beer – ethanol (aka alcohol).

Thomas is happy he came to UNK. His lab has first-rate equipment and his students are, in his words, “brilliant and inspirational.” He finds his colleagues to be among the most enjoyable group of individuals he has worked with. He loves his five-minute commute to his campus office, especially when he remembers traffic in Boulder or his hometown near Dallas, Texas. That brings up what he does miss: authentic Texas barbecue.

But he has solved that problem by learning how to create his own Texas-style smoked brisket, using, of course, Nebraska beef.
IMMIGRANT STORIES

Warren’s work breaks down barriers
By TYLER ELLYSON

“You can’t hate someone whose story you know.”

University of Nebraska at Kearney assistant Spanish professor Michelle Warren can’t take credit for this quote from writer Margaret Wheatley, but you’ll hear her say it a lot. It’s a message she definitely takes to heart.

Nothing shows that more than her most recent project. Warren, whose research typically focuses on theater and performance, is stepping outside her area of expertise to document the stories of immigrants from Spanish-speaking countries who relocated to Nebraska.

“It’s a really timely project because of all the rhetoric about immigration reform and the separation of families at the border,” she said.

Warren felt compelled to share these stories following the 2016 election of President Donald Trump, which sparked an ongoing debate over immigration laws in the U.S. She was troubled by the frequent generalization that all immigrants from Spanish-speaking countries are criminals with nothing to contribute to society.

The Kearney native walked into her own classroom and saw a number of first-generation college students from immigrant families, including some who were brought to the U.S. as young children. She learned about a student’s mother who escaped El Salvador during that country’s brutal civil war before settling in Nebraska, where she became an advocate helping other Spanish-speaking immigrants start new lives here.

“Every family here has a story,” said Warren, who made it her mission to share these stories with others.

Warren teamed up with UNK archivist Laurinda Weisse, who has degrees in history and Latin American studies and speaks Spanish, and the two received grant funding through the Research Services Council. Then they added Jacob Rosdail, an assistant professor in the UNK Department of Communication, to the project.

The three collaborators are working together to interview Latin American immigrants living in central Nebraska and share their stories.

This project will attach human faces to the immigration debate, according to Warren. She hopes their work will help people understand the important roles immigrants serve in Nebraska and start a dialogue that leads to increased cultural awareness.

“These are voices that need to be heard,” she said.

The UNK team is interviewing people from all walks of life – a high school custodian, meatpacking plant worker, grocery store owners, immigration lawyer, the director of UNK’s Office of Multicultural Affairs and others. They came from Mexico, Cuba, Colombia, El Salvador, Guatemala and Honduras and now call Lexington, Kearney, Hastings, Grand Island and small towns in between home.

Warren and her colleagues also interviewed a couple of UNK students and their parents, and there are about a half dozen students assisting the project by recruiting people with stories to tell, conducting interviews and transcribing. Each interview will
be documented in English and Spanish, with help from UNK’s Spanish translation and interpretation program. The goal is to share these stories through podcasts, video documentaries, academic articles and a traveling exhibit that can be displayed in communities across the state. Warren even envisions the possibility of a coffee table book, which is always good for sparking conversation.

“I think our job in academic and intellectual life is to create better understanding in the communities we live in and help people see stories that aren’t necessarily their own,” she said. “Particularly right now, because there are a lot of misconceptions about immigrants.”

CULTURAL EXPLORATION

As a researcher, Warren is drawn to issues related to identity and human rights. She studies Spanish, Latin American and U.S. Latino theater, comedy and films, and the influence they have on these areas.

These interests also show up in her classroom and the work she does off campus.

“I believe one of the most important responsibilities of faculty should be to create bridges between research, scholarship, classes and community,” Warren said.

She’s been doing that since returning to her hometown and joining UNK in 2013.

Warren launched the UNK@TheWorld international film series in 2014 to expose the community to different cultures and address difficult topics such as race and ethnicity, immigration and refugees and gender fluidity.

Each film is followed by a discussion led by people with a connection to that particular topic or geographic region. Some speakers are UNK faculty, some are students and others are community members.

“One of the most important things we can do as scholars and teachers is bring things to the community,” Warren said. “I’m a lot more interested in having an international film and a robust discussion about that film with community members than I am about writing the most scintillating piece on the latest theatrical release in Argentina and having it sit on a dusty shelf in the library.

“That, to me, seems like a stale form of research.”

The series, which features three films each year at The World Theatre in downtown Kearney, draws hundreds of attendees annually, including some who travel quite a distance to get here. In April, Warren said, a woman drove from Wichita, Kansas, to see “Una Mujer Fantástica (A Fantastic Woman),” a film about a transgender woman. Transgender actress Daniela Vega starred in “Una Mujer Fantástica,” which won an Academy Award for best foreign language film.

Warren started UNK@TheWorld by knocking on doors on campus and asking people to pitch in.

“I had no idea what I was doing. It was my first year at UNK, I didn’t even know a lot of people,” she admits.

Now the project receives support from Humanities Nebraska and the Nebraska Cultural Endowment, as well as the UNK College of Arts and Sciences, Modern Languages Department and women’s and gender studies and international studies programs.

The films often tie into courses Warren teaches in Latin

“These are voices that need to be heard.”
American and Spanish literature, theater and performance. She believes addressing topics through films or speakers makes a lasting impact that can’t always be duplicated in the classroom.

“If we see a world we haven’t imagined as our own, we open a new window that helps us understand something we didn’t understand before,” Warren said.

WELL-CONNECTED

The international film series isn’t the only way Warren is providing eye-opening events for students and local residents. She’s also on the executive planning committee for the James E. Smith Midwest Conference on World Affairs, which brings experts and speakers from across the world to UNK to discuss global themes.

This year’s conference was held in October with the theme “The World in Crisis: A Call to Activism.” One of the presenters was Dr. Benjamin LaBrot, who founded Floating Doctors, a nonprofit that provides medical and health care services to remote areas of countries such as Panama, Haiti and Honduras.

Warren met LaBrot while living in Los Angeles. Her connections from the University of Kansas, where she earned a master’s degree and doctorate in Spanish language and literatures, helped bring two Latino poets featured in “Knocking on the White House Door: Latina and Latino Poets in Washington, D.C.” to the UNK event.

In 2016, when the conference focused on migration and identity, she invited comedian and speaker Rick Najera to present.

Warren also met Najera in Los Angeles, where she lived from 2006 to 2013. Their daughters were friends and classmates at a bilingual charter school, and the families formed a close bond.

“I knew them as friends before I knew him as a comedian,” Warren said.

She eventually learned a lot more about Najera’s work and realized his mission as a comic and performer mirrors her goals as an educator.

Najera, who is also an author, director and award-winning screenwriter, advocates for greater Latino representation in Hollywood, the media and politics. The Mexican-American entertainer uses his career as a platform to address negative stereotypes and prejudices.

“He plays a lot with stereotypes and uses comedy to question those stereotypes and make people think about how they view people from Latin American countries,” Warren said.

Najera’s writing credits include the TV series “East Los High,” “MADtv” and “In Living Color.” He’s written several books and developed and hosted the Latino Thought Makers Series for the Oxnard College Performing Arts Center.

His Broadway play, “Latinologues,” uses humor to shed light on Latino life in the U.S. The play, which made its way across the country before the New York City premiere in 2005, was directed by Cheech Marin of Cheech and Chong fame.

Warren has authored two articles highlighting Najera’s work – “Breaking boundaries: Comedy Curing Stereotypes in Rick Najera’s Theatre & Performance” and “My work is more necessary than ever: An Interview with Rick Najera.”

EARLY INTEREST IN THEATER

Warren wants her students to learn from events and experiences outside the classroom because, she said, those are often the most inspirational moments.

“I think our job in academic and intellectual life is to create better understanding in the communities we live in.”
Her interest in foreign language and theater blossomed around middle school when she fell in love with the musicals “West Side Story” and “Evita.”

“That’s what drove me to learn Spanish,” Warren said, although she picked up French first thanks to a Rotary International Youth Exchange program that allowed her to spend time in France when she was 17. The next year, she took a trip to Mexico and spent about six weeks there.

Her parents, Mike and Becky Evers, were always encouraging Warren and her two siblings to try new things. She got involved with musical theater while attending Kearney High School and played Daisy Mae in a UNK production of “Li’l Abner” as a sophomore.

“’That part of my life is done, but I’m able to study theater and do that within my discipline,” said Warren, who also swam for the Lopers during college.

Warren started as a music performance major at UNK before changing course and earning a degree in Spanish and French. She still enjoys singing and playing the guitar and will occasionally perform with the Platte River Singers.

A world traveler who has visited more than a dozen countries, Warren is particularly fond of Spain, where she leads a summer immersion program for UNK students at Universidade da Coruña.

“A lot of the classes I teach primarily deal with Spanish culture, cinema and literature,” she said.

Argentinean theater and playwright Eduardo Rovner, who Warren met during graduate school and now considers a friend, are also interests.

“Argentina is like a super hub of theatrical activity,” she said.

Warren, who is graduate program chair for UNK’s Modern Languages Department, also appreciates the cultural richness of Kearney, which can be partly attributed to the contributions she makes to her hometown and alma mater.

“I always thought if I made a lot of money I would donate to UNK. I’ll probably never make a lot of money, but I’m able to give back with what I do professionally,” she said with a smile.
By TYLER ELLYSON

There’s an intrinsic beauty Jia Huang sees in mathematics. The University of Nebraska at Kearney associate professor enjoys the process of analyzing a problem, then developing ways to attack it.

“And if I’m lucky enough, I have the answer in the end,” he said.

That’s another draw. In math, there’s usually a definite answer. You’re either right or wrong.

“Even without any application, sometimes the result itself already looks very beautiful,” Huang said. “That’s something important for mathematics.”

Huang’s fascination with the subject started at a young age while growing up in Jiujiang, a city in eastern China located along the Yangtze River.

“In grade school, I was pretty good at math,” he said. “It’s interesting to me and I can solve a lot of interesting problems.”

Huang earned a bachelor’s degree in math from the University of Science and Technology of China before pursuing a doctorate at the University of Minnesota. He didn’t know much about the Twin Cities at that time, but the university’s strong reputation in discrete mathematics research was enough to bring him to the Midwest.

“It turned out to be a pretty good decision. Everything worked out pretty well for me and my family,” said Huang, who married his wife Ting Zou shortly before the move to the U.S.

DISCRETE MATHEMATICS

Huang’s doctorate research focused on discrete mathematics, which deals with objects that have distinct, separated values—think individual points instead of continuous lines.

“We’re especially interested in counting problems,”

Huang explained.

For example, if there are 10 teams in a sports league and every team plays each other twice, how many total games does the season include? That’s a problem answered by discrete mathematics.

Huang likes discrete mathematics because it often has “an experimental flavor.” Researchers can look for patterns, develop a theory, then prove or disprove that theory using math.

“The methods we use can be very different from the methods we use in other branches of mathematics,” Huang said.
A famous problem in discrete math is the four-color theorem, which states that only four colors are needed to color any planar map while ensuring that no adjacent, contiguous regions share the same color. That theorem took decades to prove and there are still some doubters.

At UNK, Huang’s research looks at the connections between discrete mathematics and algebra, including algebraic and enumerative combinatorics, combinatorial representation theory and graph theory.

“Algebra is a branch of mathematics with a very long history and having great significance in contemporary science, technology and engineering. On the other hand, discrete mathematics is relatively young and recently flourishing, with many applications in STEM fields, as well,” he said. “The connections between these two areas are often interesting and also useful. For instance, molecular symmetry in chemistry benefits from group theory, enumerative combinatorics and graph theory, as well as their connections with each other.”

One project that also included UNK students studied binary operations, which are widely used in science, technology, engineering and math. An example of this work is calculating the number of possible results when five different numbers are subtracted consecutively, but the subtractions can start anywhere and move in either direction.

Another area of research is domination, for example, determining the fewest number of servers needed to sufficiently cover a communication network and how that number changes if a connection is broken.

“This field has a lot of possible applications in the real world,” Huang said of discrete mathematics. “It has connections to many interesting real-life problems.”

**MOTIVATING STUDENTS**

That’s a message he repeats over and over to his students. Huang uses these real-world connections to motivate students and encourage them to take on their own research projects.

“At UNK, we are focused on students. We are student-centered,” he said. “I think research should be an important component of that.”

Undergraduate research, he added, enhances the learning experience by allowing students to apply their knowledge from math courses in a new way while discovering new things.

“It is important to not only teach them mathematical knowledge and skills, but also help them develop their own mathematical thinking and encourage them to apply mathematics in other fields,” Huang said. “One good way to achieve this goal is to engage them in research and provide them opportunities to independently solve problems by themselves, and this will further consolidate their understanding of multiple subjects in mathematics.”

In his classroom, Huang welcomes questions and collaboration among students. That’s a major benefit of being at UNK, where he’s worked since 2014.

“The class sizes are pretty small. That’s something really nice to me because I can interact with my students and...
understand their needs,” he said.
It’s a stark contrast to his time as a postdoctoral associate at the University of Minnesota, when he taught a class with about 200 students in the room.

“Most of the time I only looked at the people in the first couple of rows,” Huang said. “I don’t know how much those students got from my lecture.”

During his job interview at UNK, Huang was asked to teach a class with about 10 students who asked questions and interacted with the professor candidate. That was a selling point, along with Kearney’s size and the easy commute compared to the one-hour bus rides he endured in Minneapolis.

“I think we have a very nice work environment. It just feels very comfortable,” said Huang, noting the friendliness of faculty and students and his department’s willingness to work together.

“\textit{At UNK, we are focused on students. We are student-centered.}”

He expects to see even more teamwork when UNK’s new STEM building opens in fall 2019. The 90,000-square-foot building, part of the Otto C. Olsen replacement project, will bring the university’s science, technology, engineering and math programs together inside a state-of-the-art facility that promotes collaboration and innovation among students and faculty.

“That will be a good platform for us to find new collaboration opportunities,” said Huang, who is looking forward to sharing ideas with faculty from other departments and further exploring the connections between science, technology, engineering and math.

“I also think that will be beneficial for our students,” he said.

\textbf{FAMILY FUN}

Outside the classroom, Huang enjoys reading, particularly science fiction and history books, as well as soccer, although there’s a lot more time for the former with two sons, ages 6 and 2.

Huang did play intramural soccer at the University of Minnesota and pick-up games for a couple years at Ted Baldwin Park in Kearney before his schedule got too hectic. He likes the teamwork and strategy the sport requires.

“It’s not just one or two players,” Huang said. “It’s more of a team game.”

Huang’s wife Ting Zou teaches English language learners at Central Elementary School in Kearney, giving him a different kind of teammate to bounce ideas off.

“It’s a good job for her,” he said. “She likes teaching kids and building those relationships.”

With two educators in the household, teaching is a common topic of conversation. But does she like talking discrete mathematics as much as he does?

“That’s a different story,” Huang said with a smile. “I don’t think it’s her favorite subject.”

JIA HUANG

\textbf{Title:} Associate Professor, Math and Statistics

\textbf{College:} Arts and Sciences

\textbf{Education:} Ph.D., mathematics, University of Minnesota, 2013.

\textbf{Years at UNK:} 5

\textbf{Career:} Postdoctoral associate, University of Minnesota, 2013-14; Assistant professor, University of Nebraska at Kearney Department of Mathematics and Statistics, 2014-18; Associate professor, UNK Department of Mathematics and Statistics, 2018-present.

\textbf{Family:} Wife, Ting Zou; Sons, Yifan, 6, and Yifei, 2.

\textbf{Hobbies/Interests:} Reading (historical and science fiction), soccer.

\textbf{Honors/Awards:} UNK College of Natural and Social Sciences Travel Awards; University of Nebraska Collaboration Initiative Planning and Proposal Generation Grant.

\textbf{Areas of research/specialization:} Discrete mathematics and its connections with algebra, including algebraic and enumerative combinatorics, combinatorial representation theory and graph theory.

\textbf{Courses taught:} Applied Calculus; Calculus I, II and III; Foundations of Math; College Geometry; Abstract Algebra; Complex Analysis and Theory of Numbers.

\textbf{Recent Published Articles:}

By JAN TREFFER THOMPSON

From 30,000 feet above the Great Plains, you can’t actually see political boundaries. Just hills and valleys, fields and streams.

But when people look at environmental issues in “flyover country,” historian David Vail says, too often all they see is a battle line with producers and their farm chemicals on one side and environmentalists on the other.

Vail has a different perspective.

The University of Nebraska at Kearney assistant professor focuses on life at the ground level, where technology and agribusiness coexist with a concern for the environment — not just within a region and its communities, but within the people themselves.

“Rural people have their own views on conservation. They’re not the same views all the time that we are sort of familiar with, but they matter. And they matter a lot. And people who use the land also care a lot about it,” he said.

That focus has informed Vail’s research and writing, including the 2018 book “Chemical Lands: Pesticides, Aerial Spraying, and Health in North America’s Grasslands since 1945.” The book looks at how the spread of aerial chemical application affected not only agribusiness, but also environmental debates in the Great Plains.

“After World War II, spraying from the skies in the grasslands turned pilots into scientists, airplanes into farming tools, and pesticides into poisoners as well as protectors,” Vail writes.

In researching “Chemical Lands,” Vail looked closely at that evolution. What he found wasn’t a story about producers concerned with putting more money in their pockets, ignoring the warnings of environmentalists. It was a story about weed scientists, farmers and pilots who were concerned with precision. They field-tested new science and technologies as they weighed threats against benefits. The book shows how their efforts helped create national standards that govern the industry today.

The idea that people who work the land can also love it may surprise some today who see agriculture as the enemy of conservation, Vail said. But to him it seems natural.

LOVE OF NATURE

On the walls of Vail’s office in Copeland Hall are framed reproductions of Works Project Administration posters from the 1930s — one for Crater Lake National Park and another for Glacier National Park. They’re places Vail knows well. He keeps the posters around to remind him of the nature he loves and the way it’s been used for entertainment, production and inspiration.

“I love the national parks. I grew up going to Crater Lake National Park every year when I was younger, and that really changed me to get really excited about this, really impassioned for this stuff,” Vail said.

From Southern Oregon’s Rogue Valley, Vail grew up hiking, camping and mountain biking. He learned the importance of stewardship of the land from a family with deep connections to it (his great-great-grandmother was Klamath, a tribe that now lives on Oregon’s Umpqua Reservation) and from regular treks into the wilderness with his father and grandfather.

“My grandpa was a car mechanic, but he loved the wilderness, so we would go camping and he would explain the ecosystems that we would see — the relationship between ranching and farming in rural Oregon and the
deer populations and timber. He worked on and off for timber companies that, even back in the 1950s, pursued more of a conservation ethic in timber,” Vail said.

Living in a state with regular public debates about the timber industry and preservation of public lands, Vail saw how producers felt about the land they worked.

“A lot of my friends and their dads, or people they worked for, their families were farmers. They talked a lot about conservation. They had a different language about it. But it wasn’t just about inputs and outputs and producing. They talked about love of the land and stewardship, thinking about stewardship. So, they may be fishing in a local pond, but they’re also concerned about the fishing ecosystems of that pond, as it compares to how they produce on the land nearby,” Vail said. “All of that shaped how I see environmental history and agricultural history now.”

MANAGING RISK

Every summer, Midwestern skies fill with the drone of small aircraft engines as crop dusters dip-rise-turn, dip-rise-turn, spraying blankets of (usually) insecticide over fields. Today, regulations govern how much chemical

“Agiculture health and the health of the larger environment aren’t these separate things that can be argued about.”
should be sprayed per acre. Pilots have precision controls and guidance systems that make sure they spray their target fields, and nothing else.

It wasn’t always this way.

Though aerial application of farm chemicals began in the 1920s, industrial farming techniques didn’t see widespread use until after World War II. Then, new herbicides and insecticides came on the market, promising more effective control of the weeds and bugs that destroyed crops.

In his book, Vail shows that when these chemicals came on the market, Midwestern farmers and ag pilots recognized that misapplication presented risks to the health of land, animals and people. They took an active role in testing the science. Working alongside university scientists and Extension specialists, they planted test fields, ran experiments and altered or created new equipment to figure out how they could manage the risk.

Something Vail came to understand was that agricultural spraying developed with the help of many regional influences.

“Not just the industry involved, but the plane itself is a manifestation of regional influences. Culturally, technologically, how booms were designed, how early pilots concocted their own spray planes,” he said.

An example of this innovation is how spray planes carry the chemicals. At first, Vail wrote, pilots built their own metal tanks. But corrosion and leakage were big problems. Some pilots tried cloth or rubber linings inside the tank, which helped, but leaks continued until double-lined tanks were created. They also installed agitators, air vents and hydraulic pump systems.

Some innovations worked, others didn’t. Eventually, the industry developed standards and the government passed regulations controlling the use of agrichemicals. What’s most interesting to Vail is how much producers, pilots, scientists, Extension services and lawmakers worked together to create those controls in what he terms a “field-view” approach to agricultural science.

One moment Vail writes about is the Environmental Protection Agency’s initial standards for application of dichlorophenoxyacetic acid. Known commonly as 2,4-D, the herbicide was commonly sprayed in low volumes. The EPA set the standard for minimum use (the minimum amount one could safely use on an agricultural landscape) relatively high, Vail said, giving producers more latitude.

“The pilots all wrote letters to the EPA saying, ‘This is way too high. You’re actually setting a minimum that will not only be deadly to fields, but also it would be extremely expensive,’” Vail said.

Eventually, the standard was lowered. Those ag sprayers were actually asking the government for stricter regulations.

“The pilots had a mindfulness that I found interesting, but also important, that they have a sense of this that’s beyond the excitement of flying an ag plane, or the lucrativeness of their industry,” Vail said.

ROAD TO AG AVIATION

Vail’s research actually began during his graduate work at Utah State University, where he saw cooperative regional influences in the history of a water conservation district. He went to Kansas State University hoping to research water issues in the Great Plains and work with professor Jim Sherow, who’s known for his scholarship on water issues.

Sherow gave him some unexpected advice.

“I showed up at KSU, and my adviser said, ‘A lot of people are doing water topics, David, but I have a colleague who came across all these pesticide files that no one’s ever looked at.’” Once Vail saw the files, he realized he had a rare opportunity. The Great Plains was an obvious place to research pesticide use, and little research had been done.

Even less research had been published on aerial spraying, which Vail quickly noticed played a central role in the spread of pesticide use. Some pilots had written about their experiences, and he found one book about aerial spraying in the South. A historical look at how spraying affected agriculture in the Great Plains didn’t exist.

“Agricultural aviation plays a significant role in how Great Plains agriculture happened, not just in Kansas or Nebraska but in the region, from World War II on,” he said.

Vail found a professional group for agricultural pilots and attended their meetings. He was thrilled to find full transcriptions of the North Central Weed Control Conferences, which had drawn together people from all corners of agribusiness annually since 1944 to share their data, insights and concerns.

The transcripts painted a picture of an industry that was self-regulating. People in agribusiness worked with scientists and the government to create standards and regulations.

Those unexpected partnerships, though, wouldn’t last. “There were Great Plains pilots right there at the table, informing that shift,” Vail said. “The politics are sort of light-years apart by the ‘60s and ‘70s. I do sort of look at the pre-‘Silent Spring’ era and the post-‘Silent Spring’ era.”

SILENT SPRING

When biologist Rachel Carson wrote “Silent Spring,” her seminal critique of chemical agriculture, she was fighting cancer. When Vail read the book for an American environmental history graduate course, his mother was facing her own battle with the disease. He said that was just one reason he found Carson’s impassioned, science-based treatise impactful.

“For me it was thinking about my relationship to the larger environment, how landscapes are made and remade,
and the consequences of what that means, and thinking holistically about the environment, and all of that happened for me when I read ‘Silent Spring,’ he said.

The book pairs a solid scientific approach with elegant prose about the environment, Vail said. When it was published in 1962, Carson’s status as a female scientist writing for a general audience caused almost as much controversy as her critique, which included Carson’s argument that ag chemicals put everyone’s health at risk.

“A lot of response overlooked that she never called for a ban on chemicals. She just said these things are a lot more dangerous than we thought,” Vail said.

Any historical research into pesticide use would have to consider the effect of “Silent Spring,” Vail said. Putting his personal admiration for the book aside, Vail saw how its ideas helped quash those “unexpected partnerships” he had seen at work in agribusiness and polarized the debate over chemical use.

The book prompted President John Kennedy to create a commission to study the use of one pesticide, DDT. Testifying before Congress, Carson went into detail about the risks to ecosystems and humans. She directly criticized aerial application, charging ag pilots with using the toxic chemicals irresponsibly.

It was true, Vail said, that rogue pilots existed who didn’t follow best practices and, in some cases, even mixed their own bootleg farm chemicals, selling them to farmers at a discount. These sprayers were primarily in the South, but Carson’s critique covered the whole industry. Great Plains pilots took offense.

“They were pursuing precision and standardization in a way their Southern colleagues, if we can call them that, were not,” Vail said. “They felt they were lumped into this larger group and cast aside as the violators of the environment, when they saw themselves as the protectors, recognizing that these things are dangerous, and here’s what we’re trying to do to mitigate the risk.”

As one pilot Vail interviewed told him, “We woke up one morning and we were on the wrong side.”

With environmentalist voices raised against farm chemicals, people in agribusiness went on the defensive. The atmosphere changed, Vail said; instead of cooperatively working to set appropriate regulations, farmers and pilots started looking for ways to protect their industry.

Chemical companies reacted to the changing environment by changing their sales pitch. “They figured out the language,” Vail said, and filled their marketing with the message that chemicals protected the land, crops and agriculture from the weeds and bugs out to cause harm.

**BEYOND THE CHEMICAL LANDS**

Since publishing “Chemical Lands,” Vail has added book signings and public readings to his work as a scholar and teacher. He’s also started work on two new book projects.

One of those projects will look at the role of environmental hazard science in the Great Plains and rural Midwest, especially during the Eisenhower administration. Another, co-authored with a colleague at the Henry Ford Museum, will show public historians how...
they can integrate environmental history into exhibitions.

Vail also engages in public history. He’s active as a writer, reviewer and consultant for exhibitions. He also hosts “This Month in Agricultural History,” a monthly spot on KRVN Radio.

“I try to connect to what Nebraskans and other people in the Great Plains would enjoy hearing about,” he said, adding that community engagement is an emphasis for UNK’s Department of History.

“For me, it’s exciting to be part of a department that’s so vibrant in its efforts to reach out to the community,” Vail said. “We care about how what we’re doing connects to what the community needs, and thinks it needs.”

That community includes Vail’s students. He advises two student groups, the Sustainability Group and UNK’s chapter of Phi Alpha Theta, the history honors society, alongside his teaching duties.

“The teacher-scholar model that UNK embraces has been crucial for the inspiration to ask new questions about my own research that I may not have come to on my own,” Vail said, adding that he’s enjoyed being able to connect his scholarship to his courses.

Vail has developed courses on agricultural history, the history of science and technology, war and the environment while at UNK. He brings agriculture and environmental history into his introductory American history classes, such as telling students about the first wind erosion tests for tree breaks that were done in Nebraska.

Classroom work can even connect specifically to his research, Vail said, since students from rural areas often have their own opinions about farming and chemical use.

When a student’s comment or question pushes Vail in a new direction, it echoes the “unexpected partnerships” that have been the focus of his research.

“One of the lessons, again, is that people must have unexpected partnerships and work together to figure this out. Agriculture health and the health of the larger environment aren’t these separate things that can be argued about. They’re intertwined,” he said.

It’s a lesson Vail said would be useful if applied in today’s national debates.

“Some of the most conservation-minded people are the same people who use their land. They’ll be the first ones to protest if their fields are mis-sprayed. They’re the first to say we need to have some sort of regulation to make sure herbicides and insecticides aren’t free-flowing into our river,” Vail said.

But in today’s politicized and polarized national climate, people are more likely to dig into their own trenches than cross imaginary battle lines.

The cooperative partnerships Vail studies and writes about offer an alternative.

“This history helps us understand where we can go. Where people went once.”

David Vail

Title: Assistant Professor, History

College: Arts and Sciences

Education: Bachelor of Arts, history, minor in political science, Southern Oregon University, 2004; Master of Arts, history, Utah State University, 2006; Ph.D., history, Kansas State University, 2012.

Years at UNK: 3

Career: History instructor, Kansas State University, 2008-12; Public services archivist, Kansas State University, 2013-16; Board member, Kansas Humanities Council, 2013-16; Assistant professor of history, University of Nebraska at Kearney, 2016-present.

Family: Wife, Rosanna Vail, communications assistant at UNK eCampus and managing editor for the Human-Wildlife Conflicts journal.

Hobbies/Interests: Mountain biking, hiking, national parks, collecting U.S. Department of Agriculture agricultural yearbooks, coffee connoisseur, exploring natural areas with my dog Gingerbread, getting nostalgic with 1990s throwback games on modern video game consoles.


Areas of research/specialization: Environmental and agricultural history, science and technology, the Great Plains and public history.


Recent Published Book:

Recent Published Articles:
• “Sustaining the Conversation: The Farm Crisis and the Midwest,” Middle West Review: An Interdisciplinary Journal about the American Midwest 2, 2015.
By KIM HACHIYA

What’s in a name?

That describes the scholarship pursued by Sharon Obasi, whose path toward her position as an assistant professor of family studies seems to have been a road less traveled rather than the route most faculty members take. Obasi veered a bit from the usual path: undergraduate, graduate school, postdoctoral fellowship, faculty appointment.

With a doctorate in neuroscience with a special emphasis in developmental psychology, her initial area of published research focused on the impact of hormones on the neural development of taste and palatability.

However, a move to Kearney 11 years ago with her physician husband and young sons seemed like a good time for her to step back and get her family situated.

Obasi, born in Barbados, and her Nigerian-born husband are “two immigrants raising very American sons,” she said.

But luck favors the prepared. Obasi accepted a friend’s invitation to the Blue Gold Showcase and picnic, an annual back-to-school event celebrated by the University of Nebraska at Kearney community. There, she got into a conversation with some UNK faculty and was asked if she might be interested in being an adjunct professor. She pondered and said yes. Soon, she was teaching in the UNK Department of Family Studies and Interior Design. And when faculty positions opened up later in the year, she applied and was hired.

SOCIAL IDENTITY

Fall 2018 started her fifth year, and she has grown into her appointment, developing a research portfolio centered around naming strategies, familial connections and social identity, and she is enjoying the ride.

Obasi laughs as she describes herself. “#Opportunity. #RunYourOwnRaceAtYourOwnPace. #Serendipity,” she says, using lingo and hashtags suited to Twitter and the students she’s around.

Landing in family studies is a good fit, she said. The department focuses on family strengths rather than family dysfunction.

“We look at how we can empower families; how we can make the things that work well work even better,” she said.

Obasi is particularly interested in human development, especially the development of identity, and how families grow and develop socially.

“Families impact everything in terms of our identity.”
“I try to bring the world to my students and help infuse them with a global perspective.”

“Family is universal. But while we are forced to define ‘family’ for legal and social reasons, there isn’t a real definition because, in fact, people make up their families,” she said. “Yet, families impact everything in terms of our identity.”

One way this is evident, she said, is through naming strategies such as namesaking, or naming a child after a specific family member. Obasi has looked at namesaking in Nebraska. It can be viewed as a unique form of parental investment, a way of advertising connection to specific kin and a way of indexing solidarity within families, she said.

She notes that her own family’s background, which at first glance seems dissimilar from many of the families from which her students hail, has many similarities with them.

Born in Barbados and an only child, Obasi moved around with her parents. She was educated in Canada and moved to Nebraska from California. Her spouse has a number of siblings, many of whom live in North America. Holidays are a blend of Caribbean, African and American traditions. Her husband’s family life was very much of the “it takes a village to raise a child” model, somewhat different from her own family experience. She notes, however, the similarities with the large extended families she encounters in Nebraska. Many small towns function as students’ extended villages with informal “aunts and uncles” who know every kid in town, Obasi said. She finds that fascinating.

“All their relatives live here; they are within walking or driving distance,” she said, noting that was the similarity with her spouse’s family in Nigeria.

“I try to bring the world to my students and help infuse them with a global perspective on social policy that affects families,” she said. “So, while we look at social policies in the context of the United States, we look at these policies in other countries, too, and how those affect families. For example, we talk about health care policy in the U.S., Britain and Canada and how they differ. We look at early childhood education in the U.S., Japan, Barbados.”
NEBRASKA NAMES

Obasi’s interests and experiences in navigating cultures informs how she works with students and her emerging research agenda – naming strategies, families and social identity, global perspectives on families and social policy and the scholarship of teaching and learning.

“My research is starting to focus on how we identify each other and how we identify ourselves, often in relation to each other. And then, how is identity connected to policy?” she explained. “Families have all sorts of types, traits and characteristics. We are educating students who will be working with all sorts of families, each unique but each with similarities. So, you must recognize your own preconceptions when dealing with differences.”

“Few of us actually do change our birth names, even if we dislike them or they don’t seem to fit our identity.”

She has taught courses in lifespan development, human sexual behavior, families and social policy and research and analysis in family studies. She has also mentored student research through the Student Summer Research and Undergraduate Research programs at UNK. Obasi has received the College of Business and Technology untenured faculty teaching award and the College of Business and Technology Faculty Mentoring of Undergraduate Student Research Award.

Obasi notes that because she re-entered academia after a hiatus, she had to rebuild a research portfolio. Some projects have come about through collaborations with others. But as she started to focus on the development of identity, she began to look at names and naming conventions in Nebraska.

“Identity says, ‘I am other from you,’ and it answers the question, ‘How do I fit?’ Names are part of our identity, but we don’t pick our own names,” Obasi said. “That goes back to our families. Names are given to us by our kin, who are investing in their children. All cultures have naming conventions, but not all do what I call ‘namesaking,’ which is naming a child after a specific family member.

“My husband’s culture has a very specific naming convention involving tribe, birth order, day of the week, the family business. It’s a very deliberate method of choosing names.”

Her work on Nebraska names, published in 2016 in the Journal of Onomastics, shows that male children born between 1994 and 2014 were more likely to be namesaked (named after a relative) than female newborns. Firstborn children are more likely to be namesaked, and namesaked children are more likely to be named after a paternal rather than maternal relative. Obasi suggests this is a way to preserve family connections. Immigrants sometimes retain heritage names, other times they choose “Americanized” names.

RENAMING CEREMONIES

She is now looking at naming choices in the context of gender identity, nonbinary genders and gender-fluid people. Birth names have traditionally been based on the sex assigned at birth, she said, forcing a public gender identity that may not fit the person’s actual gender identity. Transgender and gender nonconforming persons may choose to use a new name to fit their gender identity, Obasi said.

“Few of us actually do change our birth names, even if we dislike them or they don’t seem to fit our identity,” she said. But that is changing, and some in the transgender and gender nonconforming community may celebrate new identities and names with “renaming ceremonies.” Obasi is exploring how, why and when transgender and gender nonconforming persons choose new names. Do they, for example, have a private name under which they think of
themselves? Do transgender women choose names sooner than transgender men? Do they choose gender-neutral names? The research has been accepted for publication by the Journal of Onomastics.

Obasi is excited about a recent development at UNK – a new Early Childhood Education Center and child care facility that’s expected to open next year on the campus. She’s part of an early childhood education committee that is looking at ways the facility will be used to help students who are majoring in disciplines such as early childhood education and family advocacy through training, internships, observations and other research opportunities.

Her hashtag descriptors – opportunity, own race/own pace and serendipity – have been realized at UNK.

“Being at UNK has really afforded me the chance to investigate different things, take a chance, take a risk, build approaches to my own scholarship and publish research in diverse areas,” Obasi said. “It’s been #phenomenal.”

**SHARON OBASI**

**Title:** Assistant Professor, Family Studies  
**College:** Business and Technology  
**Education:** Bachelor of Arts, psychology, McMaster University, 1992; Master of Arts, psychology, Wilfrid Laurier University, 1994; Ph.D., neuroscience, University of Western Ontario, 1997.  
**Years at UNK:** 5  
**Career:** Assistant professor, Wilfrid Laurier University, 1997-98 and 2001-02; Assistant professor, University of Nebraska at Kearney, 2014-present.  
**Family:** Husband, Chinyere N. Obasi, M.D.; Sons, Chinyere S.C. Obasi, 16; and Kalu J.C. Obasi, 14.  
**Hobbies/Interests:** World travel, tennis, music, reading.  
**Honors/Awards:** Undergraduate Research Mentor Award, UNK College of Business and Technology, 2018.  
**Areas of research/specialization:** Naming strategies and social identity, the scholarship of teaching and learning, global perspectives on families and social policy and hormonal influence on the neural development of taste and palatability.  
**Courses taught:** Lifespan Development, Human Sexual Behavior, Families and Social Policy and Research and Analysis in Family Studies.  
**Recent Published Articles:**  
- “Family Life Education in the Caribbean Islands - Barbados, Grenada and Trinidad and Tobago,” Global Perspectives on Family Life Education, 2018.
- “Naming Patterns in Rural South Central Nebraska,” A Journal of Onomastics, 2016.
Most exercise science research occurs in a controlled environment. Professors and students design a workout regime, find subjects to monitor, then track their improvements over time. This works for some tests, but what happens when participants are off their scheduled routine and back to their regular habits? How do you get people to increase their physical activity and eat better on their own? This is the type of question Todd Bartee wants to answer.

The University of Nebraska at Kearney exercise science professor appreciates all the state-of-the-art labs inside the school’s kinesiology and sport sciences department, but he prefers to conduct his research off campus. Bartee calls it “get out there and do.”
As a health education specialist, Bartee is interested in projects that improve the public’s well-being in a long-term, sustainable way. He wants decision-makers to understand the value of healthy living and how it can benefit a business, school, organization or community. Then they can tackle the barriers that prevent people from pursuing healthier lifestyles.

“I really focus on partnerships and working together. That’s one of the things that drew me to UNK,” said Bartee, who is in his ninth year with the university.

Bartee brings a public health perspective to the exercise science program – something that shows up in his research.

HOMETOWN PROJECT

The UNK professor is currently part of a two-year project in his hometown of Columbus that aims to build capacity among community members and ultimately reduce the risk for chronic diseases in residents there and surrounding communities.

Bartee, who graduated from Columbus High School in 1989, learned about the Platte County Lifestyle Coalition from a friend who also happens to be a school nurse in Columbus and member of the coalition.

After meeting with a couple other coalition members and discussing the group’s goals and challenges, Bartee knew he wanted to get involved.

“It ended up being a good match,” said Bartee, who scrambled to write a grant application and submit it to the University of Nebraska’s Rural Futures Institute in a short three-week time frame. The funding was approved in May 2017.

The Platte County Lifestyle Coalition evolved from a community health needs assessment that showed a prevalence of chronic conditions such as obesity, diabetes and heart disease in the area.

That doesn’t surprise Bartee, who has degrees in health education from the University of Nebraska-Lincoln and University of Alabama.

“We live in a society where the healthy choice is not the easy choice,” he said. “There’s billions and billions of dollars spent every year to encourage us to be sedentary and eat poorly.”

The coalition’s job is to counter this trend by coming up with strategies that prompt small changes in a large group and eventually lead to a reduction in chronic diseases and improved health throughout the county.

“It’s those gentle nudges that we’re really promoting,” Bartee said.

“I really focus on partnerships and working together. That’s one of the things that drew me to UNK.”

The Rural Futures Institute-funded project launched in July 2017 with strong buy-in from community leaders. The coalition includes representatives from the Columbus hospital, health department, chamber of commerce, government and school districts.

On the academic side, Bartee is joined by associate professor Jennie Hill with the University of Nebraska Medical Center and faculty from the Center for Community Health and Development at the University of Kansas.

The coalition has already identified priorities and started implementing strategies targeting those areas.

Bartee’s goal for the project is to ensure the coalition has the structure and leadership in place to continue addressing public health issues long after the grant funding is gone.

“We don’t want this work to end when those external resources go away,” Bartee said, adding that he’d like to see the coalition expand beyond Platte County.

He also wants others to learn from the group’s work, which is why the Platte County study research team is pursuing publication and presentation opportunities.
“As an academic field, we continue to improve our methods of working with communities to make changes at the population level,” he said, noting that each community is different, just like each person is different.

**SCHOOL WELLNESS**

That’s one of the challenges of public health. Individuals and decision-makers must see the benefits of promoting a healthy lifestyle, whether that’s more productive workers, better test scores for students or lower social costs.

“There’s as much of an art as there is a science with this kind of work,” Bartee said. “You just can’t keep yelling about the value of health. It has to be translated into what it means for these organizations.”

A study conducted by Bartee, fellow UNK exercise science professor Kate Heelan and UNK associate professor of accounting and finance Bree Dority provides some insight.

The article, published this fall in the Journal of School Health, looks at the relationship between increased fitness and students’ scores on standardized math and reading tests. Their results show students from Kearney elementary schools who improved their fitness levels also saw a 3-5 percentile jump in math scores.

And, Bartee noted: “The greatest changes were for students who performed low in math and students who were less fit. So, those who needed it the most gained the most from it.”

To emphasize the importance of good health, Bartee believes more research needs to focus on the outcomes schools, businesses and other entities are looking for.

“As health folks, we tend to write for other health folks, so we preach to the choir a lot with the work we do,” he said. “In reality, we need to be choosing outcomes that are meaningful to the stakeholders in the community.”

Heelan began collecting body mass index data for Kearney Public Schools students more than a decade ago to track trends and measure the success of programs. The district received a grant through the U.S. Department of Education to improve its physical education and wellness programs and gained national attention when the obesity rate for students in kindergarten through fifth grade declined by 15 percent from 2006 to 2012.

An article from Bartee, Heelan and Allison Nihiser and Bettylou Sherry from the Centers for Disease Control and Prevention detailing this success was published in 2015 in Childhood Obesity journal.

Bartee’s concern, though, is this progress will plateau unless Kearney Public Schools and other districts see additional benefits associated with student wellness. That’s the motivation behind the Journal of School Health article.

“We can’t just sit there and assume schools are going to want to do these things,” Bartee said. “We’ve got to start looking at how we get health promotion into the fabric of how they do schooling, but we can only do that if it’s valuable to the outcomes they feel are meaningful.”

The same is true for worksites, he added.

Bartee plans to conduct a future study that looks at school districts’ and worksites’ adoption of wellness initiatives and identifies the perceived barriers and benefits that might exist.

**STUDENT INVOLVEMENT**

Community health is a relatively unknown concept for exercise science students, most of whom are looking at careers in areas such as physical and occupational therapy, personal training, fitness instruction and strength and conditioning – jobs focused primarily on one-on-one work with clients.

“It’s challenging for students because it’s not traditionally how you think about exercise science,” Bartee said.

He combats this by bringing those real-world, off-campus experiences to the classroom.

“That’s what brings the work to life,” he said.

Bartee often involves undergraduate students in his research, and he gets entire classes out in the community when possible.

For instance, he worked with the Nebraska Children and Families Foundation and two Kearney elementary schools to start a wellness initiative supporting students’ social and emotional health. Getting people in the schools together to support social and emotional health led them to do more to promote physical activity and nutrition, as well. As a result, UNK students from his public health aspects of physical activity course regularly visited an elementary school to walk and run with the young children.

A year after the program started, the elementary schools began taking ownership. UNK’s involvement eventually ended, an unfortunate side effect of the program’s success.

“That’s exactly what you want,” Bartee said. “You want an organization to figure out how they’re going to do it on their own because they value it enough.”

Back in the classroom, Bartee said the public health process – engage a group, assess their needs and strengths, set goals, develop an intervention plan and evaluate the results – is applicable for students pursuing a variety of careers.

“Even though we’re talking about populations of people and not necessarily one-on-one, it’s all relevant to where they’re going in the future,” he said.
That being said, Bartee is pretty pleased when students decide to pursue a master’s degree in public health or career in health promotion.

“Those are the rewards that keep you coming back,” said Bartee, who loves hearing about students accepted into graduate school or landing their first job.

ROAD TO UNK

How Bartee got started in health education is a different story. “I couldn’t do a backflip. That’s the short answer,” he explained half-jokingly.

After graduating from Columbus High School, Bartee enrolled at UNL as a business major. That was OK, he said, but his mindset changed after returning to his hometown following a family illness.

While earning an Associate of Arts degree at Central Community College-Columbus, the 6-foot-4 forward played junior college basketball, took some wellness and fitness courses and gained interest in exercise science while assisting a physical therapist volunteering in the athletic training room for the Columbus High football team.

Bartee, who is color blind, saw that as a limitation for many health care professions, so he looked at a career in education instead.

When he returned to UNL, Bartee’s future was a toss-up between teaching physical or community health education, then he heard you had to do a backflip to pass PE.

“There’s absolutely no way I’m doing that,” said Bartee, who went on to earn a Bachelor of Science in Education degree in community health education.

He completed a 20-hour practical with the Lincoln-Lancaster County Health Department, which led to an internship as an epidemiology assistant, then decided to pursue a master’s degree at the University of Alabama, where he was part of a multiyear worksite health promotion initiative with Alabama Power, Gulf Power and Baptist Health System.

“It couldn’t have been a better experience,” said Bartee, who also earned a doctorate in health education and promotion from Alabama.

“It didn’t take long to realize I really wanted to be a professor,” he said. “I really enjoyed teaching, I enjoyed the preparation, I enjoyed learning. I still love the lifelong learning component.”

Scholarship that applies and creates new information continues to scratch that itch.

Bartee spent 10 years as an assistant and associate professor at the University of Wyoming, where his wife
“It’s really rewarding to give back to the state,” Bartee said.

Nebraska, helping the students and communities he shares a special bond with.

The exercise science professor is happy to be back in Nebraska, helping the students and communities he shares a special bond with.

“It’s really rewarding to give back to the state,” Bartee said.

Jane was an assistant swimming coach. An All-American swimmer at Nebraska, Jane also competed for her native Australia in the 1995 Pan Pacific Championships.

In 2009, the family, which included three young children at that time, made the move to Kearney when Bartee joined UNK.

“It’s been a good home for us,” Bartee said while applauding his colleagues for recognizing the importance of public health education and its value within the kinesiology and sport sciences department.

The exercise science professor is happy to be back in Nebraska, helping the students and communities he shares a special bond with.

“It’s really rewarding to give back to the state,” Bartee said.

TODD BARTEE

Title: Professor, Exercise Science

College: Education

Education: Associate of Arts, Central Community College-Columbus, 1992; Bachelor of Science in Education, community health education, University of Nebraska, 1994; Master of Arts, health studies, University of Alabama, 1996; Ph.D., health education and promotion, University of Alabama, 2000.

Years at UNK: 9

Career: Epidemiology assistant, Lincoln-Lancaster County Health Department, Lincoln, Nebraska, 1994-95; Health promotion specialist, Health Enhancement Solutions, Tuscaloosa, Alabama, 1995-97; Graduate assistant, University of Alabama, 1995-1998; Associate director, Health Enhancement Solutions, 1997-99; Lecturer, University of Wyoming School of Physical and Health Education, 1999-2000; Assistant professor, University of Wyoming Division of Kinesiology and Health, 2000-06; Adjunct clinical faculty, University of Wyoming Division of Medical Education and Public Health, 2006-09; Associate professor, University of Wyoming Division of Kinesiology and Health, 2006-09; Associate professor, University of Nebraska at Kearney Kinesiology and Sport Sciences Department, 2009-12; professor, UNK Kinesiology and Sport Sciences Department, 2012-present.

Family: Wife, Jane; Children, Lucy, 15; Callie, 13; and Owen, 11.

Hobbies/Interests: Golf, reading, driving my kids around.

Honors/Awards: Rural Futures Institute fellow, 2017-present; Future Leaders Academy member, American School Health Association, 2009-10; Jack Davis Professional Achievement Alumni Award, University of Alabama College of Human Environmental Sciences, 2009; Fellow, Physical Activity and Public Health Postgraduate Course on Research Directions and Strategies, University of South Carolina and Centers for Disease Control and Prevention, 2008; Top Prof, University of Wyoming, 2005; New Investigator Award, University of Wyoming College of Health Sciences, 2004; Keynote speaker, AAHPERD/AAHE in Philadelphia, Pennsylvania, 2003; Mountain West Conference, Committee on Medical Safeguards and Medical Aspects of Sports, National Collegiate Athletic Association (NCAA), 2001; Finalist, “Warming Up the Chill” Project, Center for Teaching and Learning, University of Wyoming, 2001.

Areas of research/specialization: Understanding the process of planning, implementing and evaluating effective and sustainable interventions that lead to lasting behavior change from a public/population-based perspective. While I’m most interested in change at the community or organizational level, I’ve done a lot of process evaluation work as part of funded intervention projects that focus on changes with individuals. The research addressed how well the intervention was implemented and why it did or didn’t lead to expected outcomes. Research questions related to understanding an individual’s behavior change include what factors lead to or influence changes in physical activity or nutrition, for example.

The social-ecological approach has been embraced by public health for some time and it also drives the lens for which I view how research can and should have an impact on communities, organizations and, ultimately, individuals. At any given time, there are many individuals who want to change and they need support and guidance to make those changes. We live in a society where the healthy choice is not the easy choice. How do we create healthier environments in communities, worksites, schools, communities of faith, etc. to reduce barriers and create opportunities for healthier choices to be made on a daily basis? There is growing research evidence on the benefits of living healthier lifestyles, but what does it take to get decision-makers of organizations and communities to invest in making changes to support healthier lifestyles?

Courses taught: Volunteer Practicum, Introduction to Health Promotion and Public Health Aspects of Physical Activity.

Selected Published Articles:

The heart of the meter

Hartman explores poets’ ideas, not just their words

By JAN TREFFER THOMPSON

Megan Hartman’s journey toward a career in linguistics started at her father’s bookshelf. There, she saw a book cover with dark storm clouds splitting through a golden sky, and a luminous girl holding a black horse with a spiral horn.

To the 5-year-old, “The Black Unicorn” by fantasy novelist Terry Brooks looked pretty cool.

Mike Hartman read the book to his daughter. Then he kept going, well into Hartman’s high school years. Together they explored the fantasy worlds and epic quests of literature, which draw heavily on ancient mythologies and medieval cultures.

“That started my long track down the craziness,” Hartman said. “I loved the fantasy books, loved reading with Dad. Anything old was awesome.”

Hartman followed her love of “anything old” into the study of literature and languages, but the journey didn’t stop there. She’s taken metrical analysis of medieval Germanic poetry in unexpected directions, to explore poets’ ideas, rather than just their words. Hartman said as a philologist, she connects everything she loves about language.

“I love all of this technical stuff, so I’m going to do all the technical stuff, but I want to intersect and use it to do all the literary stuff that got me into this in the first place. So, let’s bring those together a little bit and do them all,” she said.

UNIQUE APPROACH

An associate professor at the University of Nebraska at Kearney since 2011, Hartman has published critical work steadily since receiving her doctorate from Indiana University and has emerged as a key voice in scholarship on hypermetric verse.

Her first book, “Poetic Style and Innovation in Old English, Old Norse, and Old Saxon,” will present her criticism to a wider audience. She said she hopes the work will find an audience with both literary critics and metrists.

“One thing that I find very frustrating about analysis of Old English poetry is that you really have two camps. You have literary people who want to talk about the literature. They’re doing close readings and looking at the word choice and using new literary theories, and all of that stuff you’d sort of expect from literary people,” she said, analyzing the texts the way they’d analyze literature from any time period.

“I loved the fantasy books, loved reading with Dad. Anything old was awesome.”

“Then you have linguists who are looking more at the language itself. So when it comes to meter, what most of those people are doing is trying to figure out the meter.”

Hartman has blended her many interests and talents into a critical approach that does both.

First came the fantasy literature, and the love of books Hartman inherited from both parents. That love drove her scholarship decisions from the beginning. She took all the history and language classes she could in high school, viewing it as research for her own writing career.

“I took all the old classes, the Greek mythology and the early English literature and all of those. Fantasy author was my career of choice for a long time, after I decided dragon fighter was probably not an option,” she said. “I wanted to know all the old legends and the way they told the stories, so I would have more ideas and more things to write about.”

Hartman wrote a fantasy novel as her senior project, and she still enjoys creative writing. Her career plans changed, though, in college. She’d done some teaching in...
the martial arts studio where she took classes and thought an education degree would be a good backup plan in case the fantasy author thing didn’t work out. She chose the University of New Hampshire for its program, which would give her degrees in writing and English education in five years.

“Except I never really wanted to take the education courses,” Hartman said, just the English classes. And her adviser suggested fantasy “genre fiction” might not fit well into college writing courses.

“That’s when I thought, well, (J.R.R.) Tolkien didn’t have formal training in writing, he was a scholar and he just read all the books. So maybe I can read all the books, and I will take all of the old medieval courses I possibly can,” Hartman said.

Some of those were courses in Old English. She learned the language, learned how to translate the literature into modern English, then how to scan the poetry. A scansion involves marking the stressed and unstressed syllables in each line to determine the meter. While the other students didn’t have much fun with the process, Hartman was hooked.

“They were like little puzzles, and I loved all the little puzzles and trying to figure it out and putting it together. And everybody thought I was crazy,” Hartman laughed.

The same “mathy kind of brain” that helped Hartman learn French, Japanese and Latin also helped her scan poetry. Equally important, though, were the years of piano lessons she’d taken from her mother.

“That’s the thing that I think really let me bring everything I love together. It’s that mathematically, analytically charged version of it so that I can do the markings and linguistic and statistical analyses. But then there’s a certain degree that you have to feel it, and hear it, to really make the stylistic part of the metrical analysis work,” she said.

FINDING A NICHE

Hartman was recruited to Indiana for graduate school by R.D. Fulk, a top linguist. The same day she received a rejection letter from her first-choice school, Cornell, Hartman got a call from Indiana University offering her a fellowship.

“That’s when I found out Rob had supported my application,” she said. “Not only is he an amazing super scholar and one of the nicest men you will ever meet in your entire life, he is one of the best metrists in the entire world.”

And Indiana University’s German department had another top metrist, with whom Hartman would study Old Norse.

“I didn’t even know you could do (scholarship in) meter, and I applied at this school and got in where the two people you would want to work with were working,” Hartman said.

Metrical analysis starts with a scansion. Zeroing in on specific verses or lines of a poem, Hartman marks stressed and unstressed syllables, counting as she goes. Then she categorizes the lines based on the metrical pattern.

Hartman uses spreadsheets to document the types of lines used, how long each series of unstressed syllables is, what type of words are used, whether those words are in lifts or drops, and “all the other things that might be interesting that interact with the scansion somehow.”

Metrical analyses are typically used to figure out the rules of meter poets were using. They also help scholars determine what dialect texts are written in, and to create adaptations. Hartman, though, decided to use her skills differently.

Rather than just mapping the typical poetic features, Hartman’s spreadsheets compare a host of data: how poetic
diction is used, what syllabic positions poetic diction takes, where syntactic breaks occur, or the placement of finite verbs. She uses the additional data to look beyond how poets have constructed their work, finding evidence of the ideas the poems convey.

“What are those moments that are maybe more significant because of the way (the poet is) using those more unusual verse types and using them at kind of key moments? That’s why I make these crazy spreadsheets,” she said. She focuses specifically on hypermetric verse, with lines that extend beyond the standard meter pattern.

In Hartman’s 2011 article on the Old English poem “Judith,” for example, she shows that the poet elevated the tone of hypermetric sections through such stylistic choices as verb placement and the number of stressed syllables. This tone shift, she argues, is used to emphasize verses that carry the poem's themes – moral contrast, reversal of fortune and God’s governing role.

In a 2015 book chapter, Hartman compared the syntactic style of two Old English battle poems to show the poets had differing rhetorical aims – one’s traditional style links the English royalty to heroes of old, while the other’s more contemporary style brought heroic ideals into his present day.

With the approach she takes and the texts she works with, Hartman has found her own niche in the scholarship on medieval Germanic literature.

“There are people who get at it in different sorts of ways. Maybe not the full-on metrical analysis with literary underpinnings, but I can’t say I’m completely unique in doing that. But the focus on hypermetric meter, that’s another thing people don’t do a lot. There are certainly articles about hypermetric meter, but as sort of the core of my study, no one else has really done that. I have been referred to as the expert on hypermetric meter by people I respect, so that has been fun for me,” she said.

REACHING NEW AUDIENCES

Hartman’s published articles laid the groundwork for her book, establishing her voice as a scholar and introducing her critical approach. When her book is published as part of the Richard Rawlinson Center Series for Anglo Saxon Studies by Medieval Institute Publications, she hopes to pull an audience from both linguistic and literary scholars.

“I think that’s going to be a really neat placement for it,” Hartman said. “I’m hoping it’s going to catch the eye of some more literary scholars just because it’s part of a series they would otherwise be interested in.”

Just as Hartman’s scholarship aims to bring the literary aspects of medieval Germanic poetry to a wider audience, her courses make the literature more accessible to students. Hartman’s teaching schedule includes courses in Norse mythology and medieval literature.

Often, she said, her students are Marvel comics lovers eager to read the original stories of Thor, Odin and Loki on which current movie characters are based.

“When those movies became popular, then Old Norse mythology is all of a sudden big, and now I have this Norse mythology course that fills every time I offer it,” she said, adding that student insights have enriched her own scholarship.

One example, Hartman said, was her classroom experience with the poem “Lokasenna.” Basically an insult contest between Loki and the other gods, she used it in class because Loki is such a popular figure.

“Everyone comes to class loving Loki,” she said.

In a part of the poem that pits Thor against Loki, the students noticed Thor’s speeches used a repeated line, or helmingr, that loosely translates into a threat of violence.

“He has this helmingr that’s pretty much ‘I’m going to kick your butt,’ and now he’ll say something else. Then Loki does
some fancy insult, then Thor repeats verbatim ‘I’m going to kick your butt,’ then says something else,” Hartman said. “I was reading it as this is pretty typical Old Norse poetry, you just have the repetition of this helmingr. Then when I was trying to get the students to analyze it a little bit more, one of them said, ‘Well, it’s sort of showing the difference between Loki and Thor. It’s characterizing Thor a little bit more because Thor’s the big brute, and he can’t say anything interesting.’”

At first, Hartman dismissed the repetition as poetic convention. When she did her own analysis of the poem, though, her student’s idea made more sense.

“Now it’s totally in my book, because after I thought about it a little bit more, it’s like, ‘Well, yeah, (it’s) poetic convention, but why is he choosing to use that poetic convention for Thor when he didn’t use it for Loki in the beginning?’” she said.

“So, I’m analyzing this particular poem as kind of a little bit of a tour de force of that syntactic creativity, saying because it’s all about conversation and characterizing the speakers, the different ways they’re using the syntax and being creative is really important. Then it struck me that whoever said that, it’s really important the way that Thor’s syntax is just repetition, and then Loki has these circumlocutory crazinesses that he does to make Thor feel bad, then Thor just says something unmemorable but repetitive and threatening. It really shows the contrast between the way those two think.”

That’s just the kind of connection Hartman wants to make throughout her work, not only for students but for scholars who don’t always give medieval writers credit for their poetic achievements.

“The literary critics are reading these texts the same way someone would read a piece of prose. They are looking at the language, the words, how the words are being used, the characterization, how it reflects the society that it’s in – all the things a good literary critic would do for a piece of prose, and they do it really well. But you don’t see as much attention to the interaction between the language and the poetics,” she said.

“That’s part of what I want to be doing with my work is creating that bridge.”
Broekemier embraces technology, changing environment.
Greg Broekemier started his professional career in retail management with JCPenney.

That was more than 30 years ago, before e-commerce, social media and online advertising changed the way companies operate.

“The world was so different then,” said Broekemier, whose access to technology at JCPenney was limited to a computerized inventory system.

Today, it takes a lot more than that to stay ahead of the competition. Knowing how to properly market a product is critical in a global economy where almost anything is a few clicks away.

“The environment is ever-changing,” Broekemier said. “There are always new competitors entering the market, and sometimes competitors leave the market. Technology changes how we do things.”

That’s what excites the University of Nebraska at Kearney marketing professor.

“There’s always something new,” he said. “I can’t imagine teaching something that doesn’t change.”

Marketing is also a broad discipline that continues to grow. Businesses use it, so do hospitals, school districts, universities and many other entities.

“Whatever you’re interested in, you can work in marketing, and there’s a need for good marketers,” Broekemier said. “It’s a competitive world and marketing is the center of that competition.”

**REAL-WORLD RESEARCH**

Broekemier ensures UNK students are prepared to capitalize on these opportunities through his courses.

He teaches a marketing research class that connects students with real-world clients. Each fall, the class partners with three to six clients in need of marketing information, and students work in teams to conduct this research before providing written and oral reports. Their clients have included nonprofits, small businesses, service providers and larger companies such as Bosselman Enterprises, The Buckle and Wells Fargo.

“Any kind of industry you can think of, we’ve probably done a project for,” Broekemier said.

One project assisted a nonprofit clinic that provides medical services for uninsured residents in Buffalo and Kearney counties. UNK students conducted research that helped the nonprofit determine whether area residents knew about the clinic, its services and patient base and the need for this type of health care. This information helped the clinic raise operational money and expand.

Another, more unusual, project involved a customer satisfaction survey for an area mortuary.

“They’re in a competitive environment, too,” Broekemier explained.

This project was a bit trickier since there’s an emotional component when surveying families who recently lost a loved one.

“I still see one of the students on that team and he won’t ever forget that project,” Broekemier said.

Many of the marketing research projects stick with students for years to come. That demonstrates the course’s impact.

This type of experiential learning provides a number of benefits for students, most of whom go from having no research experience to developing a product for external clients.

Broekemier enjoys watching the students grow and gain confidence along the way, eventually realizing they have the skills to work in this profession.

“You can just see that transformation,” he said.

The class teaches them project management, client liaison, teamwork and communication skills and allows them to utilize industry software while analyzing the data they collect. Working with real clients also adds a level of responsibility and relevancy that’s hard to duplicate with case studies since they’re addressing issues businesses and organizations are currently facing.

“There’s no teacher’s manual for these projects,” Broekemier said. “Every one of them is different. Every situation is somewhat unique.”

The marketing research also ties into other courses, particularly advertising management and marketing management. Some clients, including Wells Fargo, request research in the fall then have UNK students follow up with marketing and advertising plans in the spring.

“I can’t imagine teaching something that doesn’t change.”
The projects, which are completed at no cost for clients, help strengthen the relationship between UNK and the business community and allow students to develop connections with potential employers. They also look good on resumes when that job search begins.

Numerous UNK marketing students have been competitively selected to present their work at the National Conference on Undergraduate Research, which showcases the best undergraduate research in the nation.

Broekemier said this tells employers UNK students are ambitious leaders willing to take on challenges who possess the skills needed to improve a business or organization. “Those are some pretty strong messages,” he said.

RIGHT FIT

Broekemier, who is in his 34th year with UNK, appreciates the school’s close-knit campus and smaller classes. He believes the university is the perfect size for faculty and student interaction.

“I think we have a size and mentality that not all schools have,” he said. “It’s hard for students to come here and get lost.”

This allows him to work with students on research projects and follow their progress from freshman year through graduation.

Broekemier and his wife Mary, who manages Maurices at Hilltop Mall in Kearney, had opportunities to leave the community, but they decided to stay, raise three children here and establish their careers.

“Kearney has been a great place to live,” Broekemier said.

UNK’s size also gives the marketing professor a lot of flexibility when it comes to his research. Instead of focusing on a single subject, he has the freedom to pursue several different topics of interest.

“UNK is a nice fit for me,” said Broekemier, whose research interests include consumer behavior, business ethics, retail and marketing trends and college choice.

He’s looked at small businesses’ social media practices, how music affects shoppers’ buying habits and what physicians and sales representatives think about direct-to-consumer advertising of pharmaceutical drugs.

Another study focused on what factors led students to enroll in certain colleges or universities.

“It was interesting to find what drove that decision,” he said. By collecting data from high schoolers and their parents, Broekemier learned adults were more concerned about their children’s physical safety and teenagers paid more attention to other aspects of college life, with males and females showing distinct differences. Both parents and teens considered cost and academic programs to be important.

“Whatever you’re interested in, you can work in marketing.”

“It would be kind of fun to do that type of research again,” said Broekemier, who noted that the study occurred prior to some high-profile incidents that could change students’ perception of school safety.

Another article – from Broekemier, UNK colleagues Ngan Chau and Sri Seshadri, and Santikorn Pamornpathomkul with Rajamangala University of Technology in Thailand – compares the mobile shopping behaviors of young adults in Thailand and the United States.

It’s no surprise U.S. consumers are using their smartphones and other devices more frequently to make purchases and pay bills, but some parts of the world are even further ahead of Americans when it comes to adopting this technology.

“We’re moving in that direction, but there are challenges, too,” said Broekemier, whose article was recently published in the Journal of Internet Commerce.

These obstacles include determining the best way to market on smaller smartphone screens and keeping consumers engaged long enough to complete their transactions. Currently, Broekemier said, a relatively high percentage of online shoppers place items in their digital cart but never complete the purchase. That’s something those in the retail industry want to change.

Broekemier and his team plan to expand on this study in the future.

INTERNATIONAL EXPERIENCE

China is one country where residents use their smartphones to pay for everything from taxi fares to vending machine snacks.

Broekemier witnessed this firsthand two summers ago when he taught a marketing class at China Pharmaceutical
University, which is located in Nanjing near the country’s eastern coast. He also noticed all the skyscrapers and other development in the Asian nation.

“I see why they’re such a player in international trade and commerce,” Broekemier said. “They’re clearly putting money into infrastructure and growth.”

Broekemier taught 53 students during a six-day course, with sessions lasting 4 1/2 hours each afternoon. It was a challenge covering that much material in such a short time frame, he said, but rewarding to see the students’ enthusiasm and hard work.

“Boy, they were fun to teach. They were so eager to learn,” said Broekemier, who was surprised by how well the students spoke English.

It was his first time in China, so Broekemier made time to take in the sights with Seshadri, who also taught a course at the university. They visited Beijing, stopped at the Great Wall of China and rode a high-speed bullet train.

“It was a really good experience. I have a few friends in China now,” said Broekemier, who hopes to teach another course there in the future.

REWARDING JOB

At UNK, Broekemier has served as a department chair since 2002.

That position comes with a lot of additional responsibility, as well as the opportunity to make an even greater impact. Broekemier enjoys being part of the leadership team for the College of Business and Technology, and he never turns down the chance to mentor a young faculty member or advise a student.

“The times when you can help people are really rewarding,” he said.

When UNK launched its new cyber systems department last summer, the marketing and management information systems (MIS) department also changed. MIS moved to the cyber systems department, and Broekemier’s department became marketing, agribusiness and supply chain management.

The department chair welcomed the change with a sense of excitement.

“All three programs have dedicated and strong faculty members,” Broekemier said of marketing, agribusiness and supply chain management. “That will help make the transition easier.”

He’s always been proud of the collaboration within his department.

“The times when you can help people are really rewarding.”
In 2012, the marketing and MIS department at UNK received the University-wide Departmental Teaching Award from the University of Nebraska. The award, created in 1993, recognizes a department or unit within the university system that has made unique or significant contributions to the university’s teaching efforts.

“The UNK Department of Marketing and Management Information Systems is a highly deserving recipient of this award,” then-University of Nebraska President James B. Milliken said when announcing the honor. “The department and its faculty have demonstrated a deep commitment to enriching students’ education through innovative new courses, hands-on learning, close collaborations with local businesses and outside-the-classroom experiences such as study abroad and service learning. The department’s students leave UNK fully prepared to become leaders in their business communities. This is a great benefit to the university, Kearney area and state as a whole.”

The department also received the UNK Departmental Teaching Award in 2010, 2011 and 2012, something Broekemier attributes to the quality educators he works alongside.

“It’s a culture we’ve tried to cultivate within our department of being teaching-focused,” he said.

For the university-wide award, the department received $25,000 to be used in a manner the department saw fit, such as travel expenses for a conference, instructional equipment or improvements to a classroom or student resource. Department members instead decided to use that money to create an endowment that supports a yearly student scholarship.

“That was kind of the cherry on top,” Broekemier said.
New Frontiers Through The Years

2008

PRADEEP BARUA
Professor, History

CHRIS EXSTROM
Professor, Chemistry

KATHRYN N. BENZEL
Professor, English

VICTORIA GORD-RAPOPORT
Associate Professor, Art

WILLIAM AVILÉS
Associate Professor, Political Science

TEARA ARCHWAMETY
Education Research Consultant

MARK ELLIS
Chair/Professor, History

TING-LAN CHEN
Associate Professor, Music and Performing Arts

DAWN SIMON
Associate Professor, Biology

NATHAN BUCKNER
Professor, Music and Performing Arts

SYLVIA ASAY
Chair/Professor, Family Studies and Interior Design

CHAD FONFARA
Associate Professor, Art and Art History

BRENDA ESCHENBRENNER
Assistant Professor, Accounting/Finance

JOHN STANKO
Assistant Professor, Art and Art History

HERBERT CRAIG
Chair/Associate Professor, Modern Languages

KEITH GELUSO
Associate Professor, Business

SATOSHI MACHIDA
Associate Professor, Political Science

JANE STRAWHECKER
Professor, Teacher Education

MARK ELLIS
Chair/Professor, History

TING-LAN CHEN
Associate Professor, Music and Performing Arts

DAWN SIMON
Associate Professor, Biology

NATHAN BUCKNER
Professor, Music and Performing Arts

SYLVIA ASAY
Chair/Professor, Family Studies and Interior Design

CHAD FONFARA
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BRENDA ESCHENBRENNER
Assistant Professor, Accounting/Finance

JOHN STANKO
Assistant Professor, Art and Art History

HERBERT CRAIG
Chair/Associate Professor, Modern Languages

KEITH GELUSO
Associate Professor, Business

SATOSHI MACHIDA
Associate Professor, Political Science

JANE STRAWHECKER
Professor, Teacher Education

KATHRYN ZUCKWEILER
Associate Professor, Management

MAX MCFARLAND
Professor, Counseling and School Psychology

NATHAN BUCKNER
Professor, Music and Performing Arts

DENNIS POTTHOFF
Professor, Teacher Education

PETER LONGO
Professor, Political Science

TEARA ARCHWAMETY
Education Research Consultant

MARK ELLIS
Chair/Professor, History

TING-LAN CHEN
Associate Professor, Music and Performing Arts

DAWN SIMON
Associate Professor, Biology

NATHAN BUCKNER
Professor, Music and Performing Arts

SYLVIA ASAY
Chair/Professor, Family Studies and Interior Design

CHAD FONFARA
Associate Professor, Art and Art History

BRENDA ESCHENBRENNER
Assistant Professor, Accounting/Finance

JOHN STANKO
Assistant Professor, Art and Art History

HERBERT CRAIG
Chair/Associate Professor, Modern Languages

KEITH GELUSO
Associate Professor, Business

SATOSHI MACHIDA
Associate Professor, Political Science

JANE STRAWHECKER
Professor, Teacher Education

KATHRYN ZUCKWEILER
Associate Professor, Management

MAX MCFARLAND
Professor, Counseling and School Psychology

NATHAN BUCKNER
Professor, Music and Performing Arts

DENNIS POTTHOFF
Professor, Teacher Education

PETER LONGO
Professor, Political Science
New Frontiers Through The Years

2014

SHERRY CROW
Associate Professor, School Library Science
TOMI HILL
Assistant Professor, Family Studies
CAROL LILLY
Professor, History
MIECHAILLE MCKELVEY
Associate Professor, Communication Disorders

PAUL TWIGG
Professor, Biology
SAM UMLAND
Professor, English
DOUG WATERFIELD
Professor, Art

CHARLES “CHUCK” ROWLING
Assistant Professor, Political Science
MALLORY WETHERELL
Assistant Professor, Ceramics
PHU VU
Assistant Professor, Teacher Education
ADAM JENSEN
Assistant Professor, Physics and Physical Science

NOEL F. PALMER
Assistant Professor, Management
BREE DORITY
Assistant Professor, Economics
MATTHEW R. BICE
Assistant Professor, Kinesiology and Sport Sciences

2015

ANGELA HOLLUMAN
Assistant Professor, Industrial Technology, Information Networking & Telecommunications
FRANK TENKORANG
Professor and Chair, Economics
GREG BROWN
Professor, Kinesiology and Sport Sciences
BRYAN DREW
Assistant Professor, Biology

2016

KAZUMA AKEHI
Assistant Professor, Kinesiology and Sport Sciences
HAISHI CAO
Assistant Professor, Chemistry
CHRISTINE CHASEK
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2017

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CHRISTOPHER EXSTROM
Ron and Carol Cope Professor, Chemistry
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VICTORIA GORO-RAPOPORT
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2018

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MICHAEIL WARREN
Assistant Professor, Spanish
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