

Remodeling Anatomy

\$400,000 remodeling project
key to making UNO the school of
choice for pre-health students in
the region.



a newsletter from the college of arts & sciences

UNIVERSITY OF
Nebraska
Omaha



A letter from the dean

As Dean of the College of Arts and Sciences, I always take great pride in presenting to you the accomplishments of our faculty, staff, and students. The stories in this year's A&S Newsletter embody the real world, hands on, and innovative learning and research opportunities that our faculty and staff provide to our students and showcase the success of our students and the world-class scholars who mentor them.

Innovative teaching is critical to our mission and success in Arts and Sciences. Today's students come to the university well prepared and curious, but to capture their imaginations we must offer them challenging and inspiring methods of information delivery. Today's students demand hands-on, collaborative learning experiences because they learn by doing, and by doing their learning results in production of knowledge. Our renovated Anatomy & Physiology facility reflects this philosophy, as well as the History Department's use of active-learning, role-playing games, and the focused efforts of faculty to bring new approaches to general education offerings through the use of First Year Seminars.

Of course, sometimes students learn most when they themselves become the teachers. Such is the philosophy of NE STEM 4U, the largest after school program in the area, in which UNO students provide hands-on, after school learning at K-12 OPS sites.

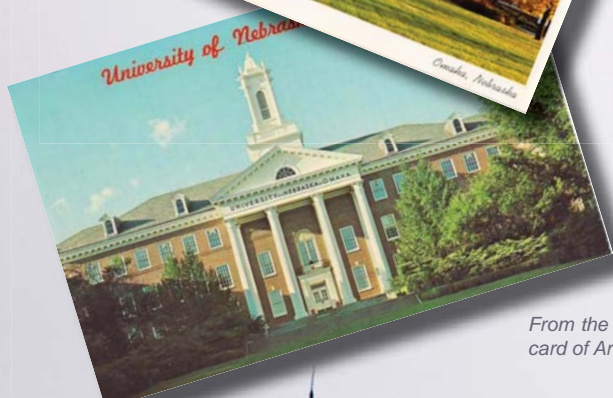
With this year's newsletter we are initiating a new column that will become a standard feature of upcoming magazines. The article on Dr. Merle Brooks celebrates the legacy of one of our college's outstanding emeritus faculty, and for this idea I'm indebted to the family of the late Dean Jack Newton, who commissioned that the magazine regularly feature someone from the College's past.

As you read this year's newsletter, I hope you are as amazed as I am of the outstanding accomplishments of our students, faculty, and alumni.



David Bookner

From the 30's through the 70's, a postcard from UNO was a postcard of Arts & Sciences Hall



ARTS & SCIENCES HALL

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Symbol of the aspirations of UNO students and faculty for generations, the cupola atop Arts and Sciences Hall is restored to its former glory as part of a 1.4 million dollar facelift. Full story on page 16.

Editor Joan Bell
Photographers Ryan Henrickson, Jeff Beiermann

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Remodeling Anatomy

Interactive technologies and collaborative workspace create state-of-the-art facility for the foundational courses for pre-health majors.

The \$400,000 bill for the remodel of the Anatomy & Physiology facility reflects only a portion of the investment the Biology Department has made in this complete reimagining of the classroom space, the pedagogy, the tools and even the substance of what is taught. As Dr. Karen Murch-Shafer puts it, "the body hasn't changed much over time, but the way we see and study the body has changed dramatically. We must show students the anatomy of today, not yesterday."

Technology, of course, is revolutionizing both health care and the study of health care. With the addition of Biopac electrophysiology equipment and digital interfaces, students are able to monitor brain waves, muscle contractions, and heart waves (EKGs). Students experience collecting real physiological data from their classmates and interpreting that data.

Equal in importance to this hands-on experience is exposure to modern health care practices including teamwork and patient engagement.

New technologies are critical to teamwork in the industry as well as in the classroom. In the Anatomy and Physiology lab, four students at each team table use a touch screen monitor and computer not only as a team of four to solve problems and discover new information on the Internet, but also to push that information to all of the other workstations in the lab for sharing or consulting.

This same technology allows students to experience patient engagement. Patient engagement requires that patients are not just directed by health care professionals, but rather that patients merge that professional advice with their own preferences and needs in order to manage, cure and prevent disease.

"It is imperative that future health care providers understand that caring for their patients involves much more than knowing the science of anatomy and physiology," says Murch-Shafer. "Our new technology is allowing us to show videos of patients with different health conditions and portray what their lives are like. By watching and discussing these patient scenarios our students emerge from our class with a better understanding of the need to treat the whole patient rather than just the parts and pieces of the human body."

The remodel of the physical space involved not only creating a space that encouraged teamwork, but also state-of-the-art equipment for effective delivery to the large number of students who need the course.



Karen Murch-Shafer

An expansion of the space allowed for an increase in capacity from 325 students each semester to 572 students, allowing the 100 or so students on the waiting list to move forward with their studies. Additional technology allows instructors to keep the larger crowd tuned in and in sync.

Instructors are able to do dissections captured on a high resolution camera and push those images to student workstations for review once the students have completed their own dissections. This technology allows instructors more time to interact directly with students and assists students with dissections.

Also critical to keeping students on track and engaged is the addition of the Anatomy Academic Assistants Internship Program (AAAs). The top students from previous semesters are recruited for an anatomy teaching internship course. These anatomy interns will be assigned a laboratory section and a weekly teaching assignment. During class, the intern will circulate to each group of students to give demonstrations and generate discussion that supports the learning objectives. In addition, the interns will staff "open lab" times where students can review and discuss the material.

Murch-Shafer and Instructor Brad Jezewski supervise and coordinate the efforts of the AAAs in a facility and teaching practice that now mirrors professional schools at UNMC and Creighton. One of the AAAs experienced in both the old and new anatomy lab writes, "Adding computers has turned the groups from lab partners at a bench into collaborators at a work station. When presented with a problem, they search for reliable sources and share their experiences and expertise, guiding themselves to answers. This is the kind of collaboration I experience in my professional work and it's exciting to see students learn to present their ideas and knowledge to their teams. We are preparing them not with just the knowledge of human anatomy and physiology but with the skills they will need to be successful in the work force."

A new crusade: setting students' minds on fire

The weapons were fashioned largely of wood or plastic and the crowns of tin foil, but the debate was very, very real. These weren't actors. This was a genuine struggle among intellectuals.

Students in Martina Saltamacchia's Crusades class were embroiled in a role playing game called *Reacting to the Past*, specifically, *The Second Crusade: The War Council of Acre, 1148*. Mark Carnes, a professor of History at Barnard College, Columbia University, who initiated the active-learning concept has appropriately described it as "setting students minds on fire."

In the game, students are assigned roles and given a list of primary and secondary texts to research. The roles or characters are divided into four factions: the French, the Germans, the Jerusalem Faction, and the Eastern Allies. A number of students are also assigned indeterminate characters who contribute their singular points of view and whose votes will finally tip the scales toward victory for a particular faction or one course of action.

Senior **Craig Horobik** writes, "A majority of students spent time seeking out additional sources, even beyond the scope of the class. For my character, Master Robert, leader of the Knights Templar, I researched not only my character and his background but also the history of the Knights Templar, Biblical Philosophy, the Qur'an, chivalry, Muslim customs, medieval military strategy, and the geography of the Holy Land."

Matthew Kennedy explains, "With every argument we used our sources to back up our assertions. It was not just a mindless argument without any evidence, but every speech was stuffed full of various quotes to justify a position. Is it justified to kill people as a Christian? Should we attack Damascus or Edessa? How about Aleppo? How exactly can we attack these cities? All of these questions needed to be answered, justified and then argued about with peers."

Shane Cavlovic, aka Duke Henry of Bavaria, adds, "the game placed us directly inside of history as if it was happening just then.... to view history at a micro level – from the view of one certain person who has their own agenda–this is how history truly unfolds. Now when you have 30 people with their own agendas, this is where the true magic happens. We dove into the primary and secondary sources to find treaties our opponents had signed that would negate their stance or to find anything that could call their faith into question. We had no idea that amidst the mudslinging, we were immersing ourselves in knowledge."

Suzi Eberly describes her role, "While I told the class I was Anthony, ambassador for Raymond II, Count of Tripoli, I was actually an Assassin spy named Malik, with the objective to attempt an assassination if it would benefit my people.... For the month we played the game, I focused on trying to understand who I wanted to kill and why this would benefit the Assassins. I chose to assassinate King Baldwin of Jerusalem because I believed King Baldwin was the ultimate symbol of Jerusalem and the Crusades and if he died the Latin Kingdoms in the East would crumble.... Based on the requirements I fulfilled in a paper, and on the delivery of my speech I had a 3 in 6 chance of my assassination at-

tempt going through. My professor rolled a dice, and I was successful in my assassination of King Baldwin, although I was chased down by the Hospitallers and killed."

Horobik says, "My initial thought was that the loss of educational presentation time was steep even for the excellent educational benefits the game provided. A trip to Barnes and Noble with my daughter changed that. While my daughter was chasing down the latest *39 Clues* books and spending her monthly \$25 gift certificate, I tried to chase down some books on the Knights Templar for a future research project. What I found was five books specifically over the Second Crusade, seven more on the Crusades in general and about an equal number more on the First Crusade. I found nothing useful on the Knights Templar. It was at that point it dawned on me. To paraphrase a quote from *Good Will Hunting*, nothing Dr. Saltamacchia would have lectured on over the second crusade during that 5-week period could not be obtained for five dollars in late fees and a check out card from the local public library.... What we gained was an understanding of how to go about viewing that information. We gained an understanding how to gather our own evidence to support a point, we gained knowledge on how to look past bias in a source and still make it useful. We gained the basic knowledge of how to be historians. What we lost, well I'll pick that up with next month's gift certificate.

A sure sign of fire, enthusiasm for the course has spilled over into presentations at a professional conference (highly unusual for undergraduates) and participation in a crusades dig (see page 18).



Martina Saltamacchia



First Year Seminars bring focus on student interests

So you're 18. You think you might be interested in studying politics. You know you need a social sciences course for your general education requirements anyway. Which of these classes would you choose?

PSCI 1000 Intro to Political Science: This course introduces students to political ideas, behaviors, processes, institutions, and issues on a national and global level.

PSCI 1000 Intro to Political Science: The Politics of Marijuana

If you chose the second option, perhaps you get the concept of First Year Seminars already. The College of Arts & Sciences is exploring ways to engage students' interests

earlier in their careers through offering special sections of introductory courses, courses traditionally called "survey" courses because of their broadest possible scope. These special sections have a much narrower focus,

and we hope a focus that will capture and hold students' interests.

For example, the history department has experimented with teaching World Civilizations through topics such as food. The study of world civilizations through food focused, initially, on three world sites and civilizations: Mesopotamia (Southern Iraq), China and Mesoamerica and the Andean region as early as 8,000 B.C.E. In these societies, food production and consumption developed into complex social institutions: class, politics, religion, culture, and writing. Thereafter, the class explored the expansion, specialization, and diffusion of agricultural practices around the world and how they changed human organization.

Dr. Jonathan Benjamin-Alvarado, Professor of Political Science, this semester is introducing students to political science through an exploration of the issues surrounding marijuana.

He explains, "I have attempted to engage the students at a number of different levels that are distinctly different from other political science courses. First, we are framing the entire question or proposition of the course on the question of 'what is the proper role of the state?' Is it to provide security or to protect us from ourselves?"

"We are also focusing on the base causes of why we have arrived at the present state of affairs relative to our laws regarding marijuana and are openly questioning and marveling at the same time at how fast change is occurring. I also have focused on giving the students the broadest base of opinions and perspectives on the question of pot by bringing in drug and alcohol counselors, federal law enforcement, state legislators, neuro-biologists, members of the legal community, etc.

"All of this is in preparation for the students assuming the roles of the State Legislature to develop legislative proposals for legalization and/or prohibition of the uses of marijuana later in the semester."

Benjamin-Alvarado points out that these special courses present challenges for the instructor as there are no textbooks available on these special points of view, but so far the reward has been worth the trouble.

"I had a very interesting thing occur at the end of one of the class sessions. We hosted Senator Sue Crawford from the Nebraska State Legislature to discuss her role in introducing legislation to legalize cannabis extracts for the treatment of severe cases of epilepsy in children, and at the end of the Q&A I told the students that there were possibilities to do internships with the Unicameral for course credit in Political Science. The senator then left and one student jumped up and ran after her, returning a minute later with a business card in her hand and beaming - 'I'm gonna intern in Lincoln next semester.' I asked her what her major was and she answered - 'Political Science now!!'"



the 1960's

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Jonathan Benjamin-Alvarado

NE STEM 4U

The largest afterschool STEM program in the area is run by college students who learn as they teach.

Since NE STEM 4U began delivering afterschool programs in 2013, 50 college students have volunteered over 5,000 hours at seven Omaha Public Schools (OPS). As of fall 2014, the number of mentors has reached 65. And, according to faculty advisor and NE STEM 4U founder, Dr. Christine Cutucache, "18 more schools want us!"

The UNO mentors of NE STEM 4U provide hands-on lessons that complement school-day learning at K-12 OPS school sites. OPS students enroll in six week sessions and each session is built around a new theme. Some of the more popular themes include Zombies and Forensic Science or CSI. Popular themes and lively experiments draw the students in, but the hands-on experience of successfully doing science can spark a genuine interest in science and open a student's mind to the possibility of being a scientist.

Studies conducted over the last ten years report a remarkable difference in students' lives as a result of participation in afterschool programs. According to Afterschool Alliance, 95% of students enrolled in a similar program in Chicago graduated (almost double the average for Chicago Public Schools) and 60% enrolled in STEM programs at four year colleges.

The NE STEM 4U program is free to students and enrollments are limited to students on free or reduced lunches through OPS. According to the NE STEM 4U website, they serve this group of students because although "only 69% of Nebraska students are proficient in STEM education, students from low socioeconomic households and those of migratory families show proficiencies of only 13%."

Making science cool, fun and safe for students from kindergarten through high school is, of course, a lot of work.

Up front, Cutucache spent months meeting with schools and other institutions, talking to local politicians, and applying for funding. Thanks to a grant from the Sherwood Foundation as well as a NASA Nebraska Space Grant the program is off to a great start. Currently, she's applying for funding from the National Science Foundation to build on that momentum.

Then there's training the 62 undergraduates and 3 graduate students how to teach fun, cool, safe science. Every

Dr. Cutucache is Haddix Community Chair of Science and Assistant Professor of Biology

lesson is practiced, every teacher-student mentored.

The success of the program is carefully tracked. On-site evaluations are conducted. 100 point pre-tests and post-tests are administered and analyzed. The curriculum is reconsidered and adjusted in light of the data. And then the work starts all over again.

The reward, like the work, also piles up. Not only do the NE STEM 4U mentors serve the youth of Omaha, and enjoy the satisfaction of good work well done, but they also build a better future for themselves. They learn how to teach students at a variety of levels, to be sensitive to all the variations, to communicate, to lead. They learn about curriculum development and assessment. They learn how exciting it is to share knowledge and watch how their students grow in that knowledge.

At that point, they know why Cutucache puts in the long hours. Also critical to the program's success are faculty advisors Dr. William Tappich, Kahn Professor of Biology, and Dr. Neal Grandgenett, Haddix Community Chair of STEM Education.



super
innovation



Conroy earns gold for cancer research

In the 130 year history of the Sigma Xi honor society, more than 200 members have won a Nobel Prize. Each year, this illustrious organization holds an International Conference at which outstanding students present their research to experts in their fields. Although Brittany Conroy's gold medal from this conference isn't a Nobel medal, it is the first place award in her field of "Physiology and Immunology."

Conroy, lead researcher, shares credit with student Matthew Latner (now at UNMC), collaborator, Dr. Tomas Helikar and faculty mentor, Dr. Christine Cutucache.

The title of her project is *Characterization of the Role of CAV1 in Cellular Proliferation Pathways in a CD4+ T Helper Cell*. Conroy built a CD4+ T cell model highlighting the role of CAV1. As CAV1 is highly overexpressed in T cell leukemias and is involved in immune synapse formation, characterization of the role of CAV1 in T cell pathways could provide a better understanding of cancer biology.

Student research reshapes college experience for students and faculty

"Millions of dollars and thousands of lives are being redirected in the effort to draw more students into STEM studies and careers. The future of the United States depends on remaining competitive in these areas and recent research suggests we're losing ground."

In the NE STEM 4 U program, elementary and middle school students experience the fun, excitement, and sense of accomplishment in hands-on science. But what about the college level student?

At the college level, out of all majors, the STEM majors have the highest attrition rates. Is the answer here also hands-on science? Unequivocally. At all levels of college study, engaging students in original research and real world issues allows students to develop both personally and professionally. They realize that they can change the world for the better and they don't even have to wait for graduation.

We feature three STEM majors on these pages who are doing research, creating new knowledge, with the potential for making the world a better place: biotechnology majors, Bina Ranjit and Brittany Conroy and mathematics major, physics minor, Benjamin Knutson.

The role of a faculty advisor or mentor in each project is, of course, critical and higher education hasn't yet figured out how to systematically measure or reward that faculty role, so, for the most part, faculty volunteer their time and talents. Most agree their efforts bring their professional lives full circle.

Griff Elder, Professor of Mathematics, and Director of the FUSE Program (Fund for Undergraduate Scholarly Experiences) explains it this way:

"There are times when faculty feel that teaching and research pull them apart. Indeed, Abraham Robinson, the famous mathematician who developed non-standard analysis, was described by his wife as 'stripping his gears' each year as he transitioned from teaching to research in May, and then stripping them again as he transitioned back in the Fall. Of course, the discomfort was worth it for Abraham Robinson, as it is clearly worth it when you are passionate about both activities. But how can this discomfort be lessened or even turned into a source of energy?"

"At UNO we have students who step into and close the gap. When this happens, it obviously becomes easier to share your passion for research. But when this happens, you and the project are also propelled forward by the enormous energy and enthusiasm of these students. This is FUSE experience. FUSE is a UNO grant funding program that supports faculty-mentored undergraduate student research and creative activity."

Ranjit takes top honors in Student Research and Creative Activity Fair

Under the guidance of Dr. Bruce Chase, Bina Ranjit earned a FUSE Award to fund her work on *Localization ADAM Proteins Expressed by the MMD Gene in Neuronal Cells of Drosophila*. Presentation of her work at the UNO Student Research and Creative Activity Fair garnered the "Best" award. Ranjit poses right with Dr. Scott Snyder, Associate Vice Chancellor for Research.

While some ADAM proteins are known to play critical roles in key developmental processes (e.g., fertilization, nervous system formation, muscle formation) and cancer, the relevance of other proteins is not known. One approach to understanding the function of such ADAMs is to undertake genetic analyses in model organisms such as *Drosophila* (fruit flies).

The proteins were visualized using indirect immunofluorescence staining to understand what role the isoforms play in the developing nervous system. Confocal microscopy was used to detect and analyze the pattern of staining.





Knutson builds weapon recognition software

"For 50 years, scientists in various fields have been working to solve the problem of image recognition for use in robotics and a wide range of information technologies," explains senior Ben Knutson, providing context for his project and his excitement. "We've completed our 2D shape recognition software and are making good headway on the next stage, 3D shape recognition."

The shapes that Knutson and faculty mentor Renat Sabirianov are focusing on are weapons.

Knutson was a senior at Millard North in 2011 when a shooting left Millard South Assistant Principal Vickie Kaspar dead and Principal Curtis Chase wounded. Knutson, who by then had advanced beyond high school math, had enrolled in calculus-based physics at UNO with Sabirianov and so inspiration met opportunity.

Knutson, now a math major and physics minor, has earned support from UNO's FUSE program as well as the NASA Nebraska Space grant. He has spoken with Congressman Lee Terry about federal funding and is investigating those possibilities.

The Omaha Police Department Crime Lab, who catalog all weapons used in crimes have shared those images with Knutson, greatly expanding the library his software depends on. Additionally, a company that provides the Transportation Safety Board with baggage scanners has given Knutson access to their 3D images for use in developing and testing the 3D software.

In Knutson's shape recognition system, the computer identifies the weapon, rather than an attendant, so no violation of privacy occurs and no attendant needs to be paid.

Knutson calls graduate school "a possibility," but for now his focus is on completing a weapon detection system that schools can both afford and implement.

Students receive on-the-job training in Archaeology at Red Willow Reservoir

by Alan Osborn

Students from both UNO and UNL have been able to learn about Nebraska's past while participating in an archaeological project at Red Willow Reservoir in Frontier County near McCook. The Red Willow Archaeological Project (RWAP) is being carried out under a cooperative research agreement between U. S. Department of the Interior's Bureau of Reclamation and the University of Nebraska.

Red Willow Reservoir (also known as Hugh Butler Lake) was created during the early 1960s in order to prevent floods and to provide irrigation water. The reservoir covers more than 1,600 acres and is surrounded by more than 3,200 acres of scenic valleys, forests, and upland prairie.

Archaeologists have worked intermittently within both the Red Willow and neighboring Medicine Creek valleys since the 1940s. Most of these previous investigations have been carried out as earth moving machines circled their excavations and lake waters began to rise.

Four years ago the reservoir was drawn down to twenty percent of its capacity in order to modify the earthen-core dam. Consequently, archaeologists have recently focused upon investigating a number of known prehistoric sites before they go back under water.

Since 2007, thirteen students from the University of Nebraska have either been employed on RWAP or have taken a field course while learning about archaeology firsthand. Federal legislation requires that archaeologists carry out intensive surveys to locate cultural resources on all public lands — particularly those that are to undergo development including dams, irrigation systems, highways, and airports.

Since the 1970s, archaeologists

have increasingly been employed in both state and federal jobs related to the management of such cultural resources that include prehistoric and historic Native American sites, as well as the material history of Whites, Blacks, Asians, and Latinos. In fact, a recent survey in the U.S. found that about 80 percent of the jobs available for archaeologists are in cultural resource management. This is one of the more important reasons that today's students should be included in cultural resource management projects like that being carried out at Red Willow Reservoir.



During the summer of 2014, Sociology students Matt Zmijewski, undergraduate, and David Scheer, graduate, were employed as crew members on RWAP and also completed requirements for an independent studies course.

Students who participate in the RWAP learn about identifying archaeological sites, systematic collection of artifacts and field data, excavation methods, global positioning systems (GPS), site mapping, and lab methods. This summer they conducted small scale excavations to help assess the scientific potential of three prehistoric sites for the Bureau of Reclamation. In the near future, these prehistoric localities will be submerged once again beneath the waters of Red Willow Reservoir. This project has enabled us not only to learn more about Nebraska's past but also to provide an opportunity for university students to experience archaeological field work first hand.

Dr. Alan J. Osborn is an assistant professor of anthropology. He also holds an academic appointment at the Midwest Archeological Center (National Park Service) and serves as Curator of Anthropology and director of the Nebraska Archaeological Survey at the University of Nebraska State Museum.

Tapprich awarded Sophie and Feodora Kahn Professorship



A successful department chair is faculty advocate, fiscal manager, staff supervisor, report-writing maniac, and visionary who can lead the faculty in their teaching, research, and outreach. It is the exceptional professor who can be such a successful administrator and be a leader by example as an active researcher and innovative teacher. Bill Tapprich was recently honored as the Sophie and Feodora Kahn Professor of Biology for achieving it all.

Tapprich, Chair of Biology for ten years, is committed to the student research experience. He notes, "It has been my pleasure to work with hundreds of undergraduate research students in my 24 years at UNO. These include biotechnology interns, independent research students, FUSE students, UNO-UNMC Biotechnology-Biomedical Research Training Program students, and Scholars in the IDeA Network for Biomedical Research Excellence program."

Tapprich has also developed a Course-Based Undergraduate Research Experience (CURE) in which students discover viruses in area water samples. The plan is to incorporate this research even in first-year courses. Tapprich explains, "The goal is to engage students in research as soon as possible. Studies show substantial learning gains among students who complete CUREs early in their career."

Tapprich, "humbled" by the recent award of the Kahn professorship, is quick to point out that his department's overall success is due to the talented faculty he serves. Other recent STEM initiatives in the news include the research and education facility at Glacier Creek Preserve and NE STEM 4U.

Professorship honors courage, generosity, industry underpinning lifetime of learning

A gift from the Kahn Family Foundation honors family matriarchs Feodora and Sophie Kahn who brought their families out of Nazi Germany in 1938 to build a new life in Nebraska. The risks they took and the sacrifices they made provided the next generation a good life and a good education.

Michelle Kahn, Sophie's granddaughter, writes, "My dad was born a Jew in Nazi Germany in 1934 into a family of cattle dealers, none of whom had more than an eighth grade education. They lived in an apartment above the cattle barn.... it was my great-aunt Feo who made it possible for almost the entire Kahn family to flee persecution in their homeland on one of the last transports before the German borders were closed in 1939. She unabashedly asked her uncle, David Kaufman, who lived in Grand Island Nebraska, to sponsor 80 families to come to America...."

According to Michelle, a pregnant Sophie determined her family would emigrate when her husband was jailed for punching a man "who yelled a racial slur at him." "Oma Sophie took it upon herself to smuggle money out of Germany in her unmentionables in order to start a new life a world away."

Michelle's dad, Sophie's son, Guinter Kahn flourished in the new life, despite the language challenge, finishing high school in three years and his undergraduate degree in biology at UNO in another three. Kahn graduated from UNMC in 1958 and did his residency at the University of Miami.

In the 1960s when Kahn was head of the University of Colorado's dermatology department, he and his medical assistant Dr. Paul Grant began developing a topical solution for hair growth known as monoxidil, eventually mar-

keted by UpJohn as Rogaine. After a legal battle, Kahn and Grant received royalties and credit on the patent.

According to Howard Cohen from the Miami Herald (9/24/2014) "The windfall didn't change Kahn. He didn't upgrade his aging Chevrolet Caprice. Or leave his medical practice."

Guinter Kahn carried on with the values he had learned from Aunt Feo and his mother, Sophie. In addition to recognition for his philanthropic ventures in Miami and other places around the world, he was recognized for his generous support to UNO in 2006 when the university named the library addition in his honor.



Kahn loved learning and was passionate about education his entire life. Michelle adds, "Even after earning his medical degree and an honorary

doctorate, and gaining international recognition for discovering Rogaine, he still wanted to learn more. Until his stroke, he could be found reading the latest research in the library every Sunday."

Speaking of Great Aunt Feodora and Oma Sophie, Michelle says, "I like to think that had they been born a generation later and under different circumstances, they would have availed themselves of an education here too. Their hard work and ingenuity gave my dad the opportunity to become as successful as he was. I hope with this professorship in Biology, the Kahn family helps to inspire the future generations of doctors, scientists and teachers to love and appreciate the value of a lifetime of learning and education. Sophie and Feodora would have been very proud of having this professorship named for them, and I can think of no one more deserving of this honor than these two women."

Science Education, life and legacy of “Doc” Brooks

Merle Brooks' passion for education had its roots in his childhood on the family farm in Missouri. His father, who was also a school teacher and minister, and his mother encouraged their children to pursue an education.

After World War II and four years in the Army, Brooks earned his bachelor's and master's degrees in biology at Emporia State Teacher's College. In 1956, he earned his PhD in Biology from the University of Boulder at Colorado.

While teaching at Emporia State and long before the world had heard of STEM, Brooks and colleague Dr. Weldon Baker studied the preparation of high school science teachers in Kansas and found that most science teachers had little training in the sciences, resulting in high school students getting an insufficient science education.

Shortly after the National Science Foundation was created by Congress in 1957, Dr. Brooks secured funding for the first NSF Institute for Science Teachers. Under his direction, the institute at Emporia gained national recognition.

In 1959, Dr. Brooks brought the institute to the University of Nebraska at Omaha. Hundreds of science and math teachers attended the institute and passed on what they learned to thousands of students. Brooks also worked in support of the National Science Fair, the Visiting Scientist Program of the Nebraska Academy of Sciences, and the Outstanding Biology Teacher of Nebraska.

At UNO, Brooks taught general botany, limnology, plant anatomy, morphology and physiology. His dedication to teacher preparation and biology inspired many students, among them Dr. Ron Hoham and son Dr. Kenton Brooks,



“Doc” Brooks with a group of students drawing water samples on a trip to Allwine Prairie in 1963. Limnology, or the study of freshwater biology, was one of Brooks' areas of interest.

both going on to earn PhDs in Biology. Brooks' son Loel also studied Biology at UNO but chose a different path, earning a bachelor's degree in History and his Juris Doctorate.

Merle Brooks retired in 1978 and lived in Omaha until he died in 1996. To honor his life-long commitment to science education, Brooks' wife of fifty-five years, Blanche, together with his two sons and Dr. Hoham established the “The Dr. Merle E. Brooks Academic Achievement Award in Biology and/or Science Education.”

The income from this endowment is used for awards to outstanding undergraduate or graduate students in the Departments of Biology or Teacher Education, who have a desire to pursue a career in the area of plant sciences, limnology and/or teaching biological sciences at high school level.

Budding plant scientists carry on Brooks Legacy

Two Biology graduate students from Dr. Roxi Kellar's lab are the recipients of the 2014 Merle Brooks Achievement Award.

Shelly Aust began working with Dr. Kellar as an undergraduate and is continuing her study of plant biodiversity. In addition to maintaining a high GPA, she has made presentations at multiple professional conferences including the International Botany Conference in New Orleans. In service, Shelly has volunteered for Party for the Planet at Henry Doorly Zoo and leads Middle School field trips at UNO's Glacier Creek Preserve. She hopes to build a career in research and conservation.

Like Shelly, Dakota Ahrendsen is working on plant biodiversity in Kellar's lab. In addition to maintaining a high GPA and making presentations at professional conferences, Dakota has a peer reviewed abstract published in the proceedings for the International Association for Research on Service Learning and Community Engagement. In service, Dakota is involved in NE STEM 4U and has volunteered for Party for the Planet, Collective for Youth, and Habitat for Humanity. Dakota is pursuing a teaching career at the university level. She writes, “The Brooks award is one of few aimed at graduate students with interests in plant sciences or science education and it is refreshing that it is focused

on academic achievement and career goals as opposed to research design and concept. For me, being recognized for my achievements and career goals only increases my passion for Biology and drives me to work harder to meet my



Photo by Chauncey Kellar

From left to right, Dr. Roxi Kellar, Aust, Ahrendsen enjoying Niobrara Valley Preserve where Kellar's lab investigates the genetic basis of biodiversity in plant species.



Zha takes on health care

Mengyi Zha has found her life's mission: to change health care education and health care systems. She found her earliest inspiration growing up in Beijing where she became aware of the large number of poor and homeless people who had no access to health care.

After a semester as a pre-med student at Peking University, Zha came to UNO where she majored in math and

minored in Chemistry. During her time here, she learned about student-run free clinics. She visited a number of free clinics to learn more and ultimately was able to convince government officials and university administrators in Peking to give health care based in compassion and volunteerism a try. The Sunshine and Love Clinic opened in 2010 and today is run by hundreds of student volunteers. The clinic provides physical exams, diagnosis of minor ailments, and health profiles for the poor. By spending time getting to know patients, volunteers are able to bridge both the economic and social divides between the poor and the medical community.

Zha knows that this one clinic is just a small foothold on a very large mountain, but she continues her efforts to build the clinic as a model and to spread the word among faculty and students at every opportunity.

Now a student at Geisel School of Medicine at Dartmouth College, she told the News Center there, "Geisel has been really supportive of my efforts. For the past year, I've been able to take time off from my studies to organize and bring medical students from China to the U.S. to attend the annual Society of Student-Run Free Clinics conference." Zha has also been awarded a fellowship from the Schwartz Center for Compassionate Health care. Zha's project involves studying the local homeless population and looking for ways to better serve them, with the ultimate goal of incorporating what is learned into Geisel's curriculum.

Internationally renowned physicist, astronomer Penny Sackett, one of UNO's brightest stars

When this former Chief Scientist for Australia was but a physics and math major at UNO in the 1970s, her mother suggested that she also get certified to teach. "She wanted me, she said, to have something to 'fall back on' just in case. Just in case, well, in case the physics and math didn't work out."

Her study of physics and math served her well in her graduate studies in theoretical physics at the University of Pittsburgh. After fifteen years of teaching and research at Pittsburgh, she took a post as assistant professor at the Kapteyn Astronomical Institute at the University of Groningen in the Netherlands.

There she assembled an international team of 73 astronomers known as PLANET (Probing Lensing Anomalies NETwork) that used microlensing to search for planets. In 2005, the team discovered the planet OGLE-2005-BLG-390Lb. The discovery was remarkable as this planet was the smallest planet ever discovered outside our solar system, circling a star 20,000 light years away in the center of the Milky Way.

Sackett's next move was to Australia to become director of the Australian National University (ANU) School of Astronomy and Astrophysics, and of the Mount Stromlo and Siding Spring Observatories. After wildfires destroyed



the world-famous, 78-year-old observatory and its five telescopes, Sackett led not just a rebuilding but a significant revision to the facility which included placement of a new telescope in an area less subject to light pollution and entering into a partnership with a consortium of universities and institutes to build the proposed Giant Magellan Telescope, a

telescope many times more powerful than any existing in the world today.

In her next post, as Chief Scientist for Australia from 2008 to 2011, Sackett provided independent advice to the Australian government on matters of science and innovation and was a vocal champion of evidenced-based decision-making.

Today Sackett maintains an adjunct professorship at ANU and is an independent strategic advisor and facilitator serving corporate, government and not-for-profit sectors in Australia and abroad.

Sackett has served on various international boards, including that of the Giant Magellan Telescope, and the Association of Universities for Research in Astronomy, a body that governs large astronomical centers, including the Hubble Space Telescope Science Institute. For her contributions and service to astronomy, Sackett was awarded an international fellowship in the Royal Astronomical Society.

Sackett was most recently honored by the UNO Alumni Association Alumni Achievement Citation and by the College of Arts & Sciences Outstanding Alumni Award and graciously agreed to give the charge to graduates at the 2014 Arts & Sciences Spring Commencement.

As for her mother's fallback plan, Sackett shared with A&S graduates that although she had never used her teaching certificate, she valued the skills she acquired through that education.

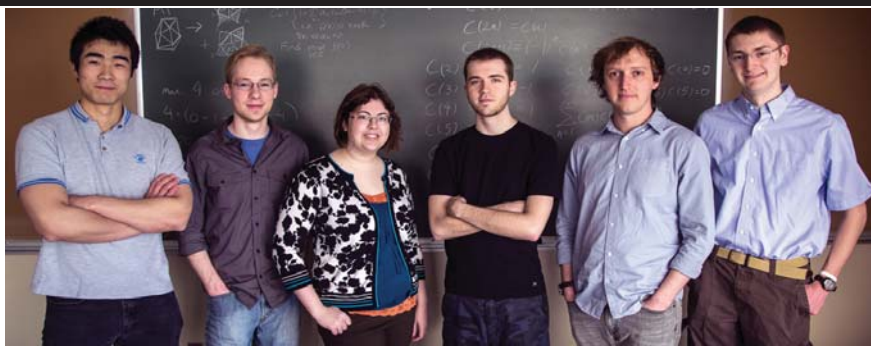
Sackett pointed out that, "A degree in Arts and Sciences does not so much certify you to make a living in a given field, as give you a language with which to make a life in a new land of discovery and contribution.

The languages I learned at UNO -- physics and mathematics -- have allowed me to make small contributions to our knowledge of the cosmos.

My life's trajectory has allowed me to act as a translator between the worlds of science and politics.

What seemingly disparate worlds will you bring together as you hone your translation skills?

This commencement is just the beginning of a lifetime of learning languages."



From left to right: Teng Li; Nathan Cornelius; Emily Divis; Brad Horner; Harrison LeFrois and Brandon Kirk.

Math Team in top 10% in North America

UNO's Putnam team placed 49th out of 557 competing institutions from across the United States and Canada, good enough to be among the top 10 percent of participating North American schools. The result is the school's best finish ever in the Putnam Competition, besting its previous high finish of 67th (out of 476) in 2002 which placed UNO in the top 15%.

This year's competitors include Teng Li, Brad Horner, Isaac Anderson, Emily Divis, Brandon Kirk, Nathan Cornelius and Harrison LeFrois. Individually, Li placed in the top 10 percent of North America and Horner in the top 15 percent. Anderson, Divis and Kirk—a freshman—placed in the top third of the competition.

"This is huge," said Dr. Griff Elder, the Maurice and Nancy Lipton Professor of Mathematics at UNO. "There is a tremendous amount of street credibility that comes with such a high finish."

Elder, who helped supervise a study group for the competition, added, "UNO is in the midst of a mathematical surge, and it shows with our graduates. Recent students have headed to schools like Cornell for a Ph.D. and have accepted jobs at Google and the like."

Outstanding Undergraduate Achievement Awards 2014

Krista Apa

Psychology

Sara Ausdemore

Sociology

Derek Benson

Foreign Languages – French

Michael Boylan

Physics

Erin Burkett

English/Language Studies

Natalie Christiansen

Foreign Languages – Spanish

Benjamin Cleary

Philosophy

Delaney Farnsworth

English/American Literature

Moussa Guira

Environmental Studies – Earth Science

Tyler Herek

Biology

Ian Jones

Religious Studies

Evan Kenkel

Foreign Languages - German

Teng Li

Mathematics

Sanjaunita Murguia

Latino/Latin American Studies

Samuel Nath

Geography

Andrew Neville

Chemistry

Benadette Ngameleue

Biotechnology

Chelsea Rose

Psychology

James Sadowski

History and Political Science

Nathaniel Schlagel

Geology

Erin Smith

International Studies

Emily Sunde

English/Creative Nonfiction

Zoe Yohn

English/British-Irish Literature

Austin Zigler

Environmental Studies – Life Sciences

Honorees selected by major departments must have a minimum cumulative grade point average of 3.33 and are selected on the basis of academic achievement in addition to their contributions to the university and the community.

A&S students dominate 2014 student honors

Helen Hansen Outstanding Graduate Scholarships



were awarded to **Daniel Harris** and Patrick Mainelli. Harris is a doctoral student in Industrial/Organizational Psychology whose current research interests include creativity, personality, leadership, and ideological organizations. He plans to develop a research program that focuses on malevolence and dysfunction, such as malevolent creativity, destructive leadership, dysfunctional organizational cultures, and terrorism. He received a Terrorism Research Award from START, a consortium that focuses on the study of terrorism and responses to terrorism.



Patrick Mainelli is a graduate student in English with a talent for teaching and writing. As a graduate teaching assistant for two English composition classes, Patrick is responsible for developing lessons, assignments and exercises that enhance students' growth and knowledge in the subject.



An Outstanding Student Athlete Award was presented to **Melanie McCormick**, a graduating senior majoring in biology and minoring in chemistry. These awards are presented to student athletes on the basis of academic and athletic achievement in addition to their contributions to the university and community.



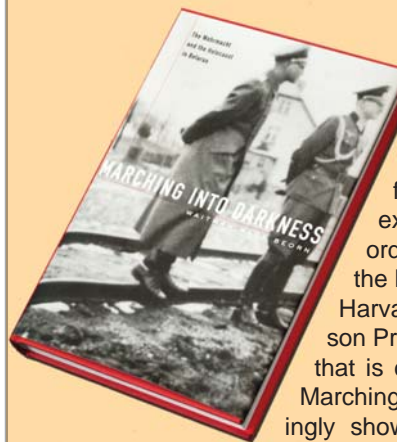
The Senior Vice Chancellor's Award for Outstanding Leadership recognizes an undergraduate student for exemplary leadership through influential participation in campus organizations and community volunteer work, in addition to scholarly achievement. **Martha Spangler**, graduating with a Bachelor of Arts in Sociology and a minor in Spanish was also the student body president/regent for the 2013–2014 academic year.

Outstanding Dean's Scholar for Arts & Sciences went to Andrew Neville.



A dual major in chemistry and biotechnology, Neville was recognized not only for academic achievement but also his contributions to the university and the community. Among his scholarships is the Schultz Collegiate Scholarship awarded by the Nebraska Academy of Sciences. His long list of volunteer activities includes Habitat for Humanity, the American Red Cross, the University of Nebraska Medical Center, and Lydia House.

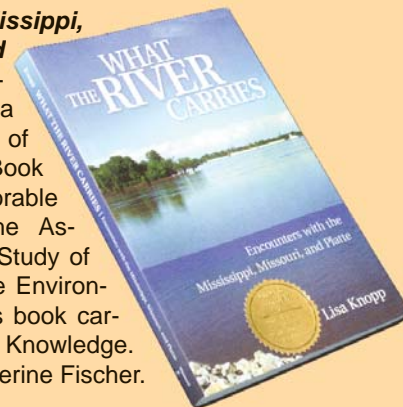
Award-winning books from our faculty



Marching into Darkness: the Wehrmacht and the Holocaust in Belarus by History Professor Waitman Beorn, explores the role of the ordinary German soldier in the Holocaust. Winner of the Harvard University Press Wilson Prize. "With a level of detail that is chilling to the bone, . . . Marching into Darkness convincingly shows how and why these atrocities could occur." Karel Berhoff

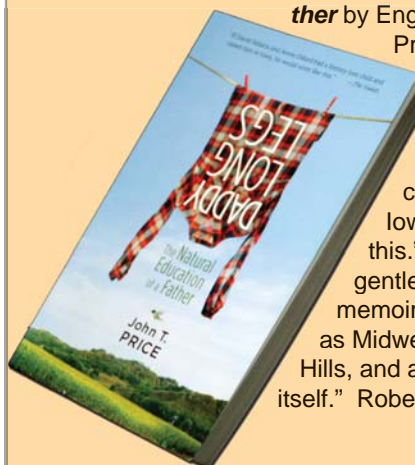
What the River Carries: Encounters with the Mississippi, Missouri, and Platte

by English Professor Lisa Knopp, winner of a Nebraska Book Award and Honorable Mention from the Association for the Study of Literature and the Environment. "What this book carries? Majesty. Knowledge. Inspiration." Katherine Fischer.



Daddy Long Legs: the Natural Education of Father

by English Professor John Price. 2013 Midwestern Connections Book Pick. "If David Sedaris and Annie Dillard had a literary love child and raised him in Iowa, he would write like this."—*The Iowa* "This gentle, ingenuous, and funny memoir of a flawed father is as Midwestern as the Loess Hills, and as universal as family itself." Robert Michael Pyle.



A&S Faculty Awards

Dr. Randy Adkins, Professor and Chair of Political Science, was honored for excellence in research. In a letter of support, Dr. Richard J. Powell, Director, University of Maine Institute for Leadership and Democracy, and Associate Professor of Political Science writes, "Randy's work has been especially influential in shaping how political scientists have come to understand the impact of the early stages of presidential nomination campaigns. Randy has been one of the primary scholars responsible for transforming the field by applying sophisticated quantitative methods to the study."



Two of Foreign Language's Finest were honored for excellence in teaching, Drs. Claudia Garcia, Associate Professor of Spanish, and Gwyneth Cliver, Associate Professor of German (photo right). Garcia's supporters write of her "deep commitment" and "enthusiasm" both in UNO classrooms and outreach efforts. "She exudes and exacts excellence." "Due to her, I became aware of my full potential ... she turned me into the person I am today." Cliver's students write of her "passion" and "dedication," each one applauding her availability outside of class for individual help. "It wasn't until I took courses with Frau Cliver, that I was finally learning the language and not just memorizing it."

Robert H. Woody, PhD, ScD, JD, Professor of Psychology, was honored for 40 years of professional and community service. Regarding his service to the profession Dr. Steven Walfish,

President, APA Psychologists in Independent Practice writes, "Wherever Bob Woody goes, he brings with him his attitude of 'How can I be helpful?' What I especially appreciate about Dr. Woody is that



he backs up this attitude with action of the highest caliber."

McCarty receives UNO Teaching Award

John McCarty, Professor of Biology and Director of the Environmental Studies Program, (photo below) was awarded the UNO Excellence in Teaching Award for 2014. "Dr. McCarty is an outstanding professor. He is patient, focused, and driven to help students succeed even beyond his classroom," writes one student, and that sentiment is evident in each additional letter of support.

"Dr. McCarty is an engaging and thought-provoking lecturer who is clearly passionate about his subject material," adds another and another and another.

All the letters speak to McCarty's continuing influence in the lives of his students. "Dr. McCarty not only helped to shape my knowledge and abilities as I completed my undergraduate education, but he helped to shape my entire life and future."



Rose Strasser, John McCarty, Roni Reiter-Palmon, Claudia Garcia, and Gwyneth Cliver pose with Dean David Booker at the Faculty Honors Convocation

Reiter-Palmon earns UNO Research Award

Roni Reiter-Palmon, Professor of Psychology, was recognized by the UNO Excellence in Research Award for 2014 (photo below). Reiter-Palmon has worked with many different organizations and government agencies, bringing not only recognition to UNO but also many research, internship, and employment opportunities for her students, seventy plus publications, and roughly five million in grants.

Among Reiter-Palmon's numerous other titles, are Editor of *Psychology of Aesthetics, Creativity, and the Arts*, an APA publication, and Director of Research for UNO's Center for Collaborative Science.

Dr. James Kaufman, Director of the Learning Research Institute at California State University, San Bernardino, writes, "She's the kind of scholar and leader who raises the quality and production of everyone around her. She is a research powerhouse, a generous mentor, and an academic leader."

Strasser earns Outstanding Faculty Service-Learning Award

Rose Strasser, Associate Professor of Psychology and Neuroscience, (photo above) was recognized by the Outstanding Faculty Service-Learning Award for 2014 for her incorporation of service to the Nebraska Humane Society, the Henry Doorly Zoo, and area schools into the classes she teaches.

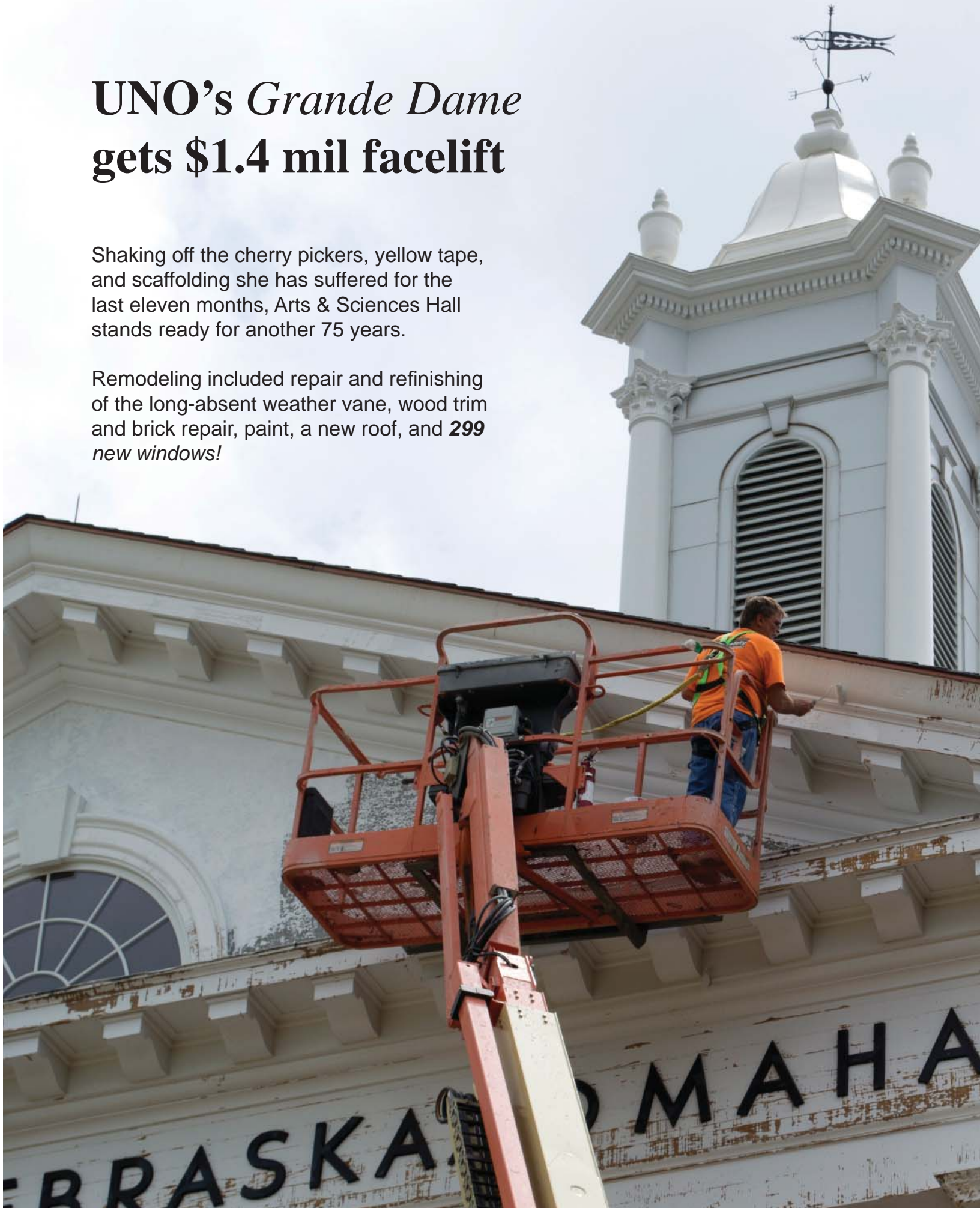
Strasser's learning laboratory students interacted with area high school students to develop clicker training strategies for dogs at the Nebraska Humane Society. In her Animal Behavior Laboratory class, her students partnered with the Omaha Henry Doorly Zoo and K-12 grade students to apply behavioral observation skills to answer questions posed by zoo staff regarding specific behaviors of captive animals.

Strasser has also been awarded the Excellence in Community-Based Teaching & Scholarship Award by the Campus Compact Heartland Conference.

UNO's *Grande Dame* gets \$1.4 mil facelift

Shaking off the cherry pickers, yellow tape, and scaffolding she has suffered for the last eleven months, Arts & Sciences Hall stands ready for another 75 years.

Remodeling included repair and refinishing of the long-absent weather vane, wood trim and brick repair, paint, a new roof, and **299 new windows!**





Arts and Sciences Hall is the original building on the Dodge Street campus and was dedicated in 1938. Many opposed the “west Dodge” location at the time as they feared the municipal university would become a school for “the children of millionaires.” The Omaha World-Herald was among the influential voices that called for locating the school nearer to downtown and the working class. In their response to this argument, the Regents pointed out that the cost of the land at the western edge of town was significantly less than land near downtown.

Residents of Fairacres, the neighborhood just west of the proposed Dodge location, expressed concern that their neighborhood would “degenerate into fraternity houses, sorority houses, boarding houses, confectionery stores, small supply houses, saloons, soft drink parlors, and such places.”

The controversy was finally settled by an unexpected grant of \$414,000 from the Public Works Administration. The grant required short deadlines that forced a decision in favor of the Dodge street location. There were rumors that the grant was engineered by FDR himself, in part a response to the World-Herald’s criticism of The New Deal.

Frank Latenser of Omaha designed Arts & Sciences Hall. The architectural firm of John Latenser & Sons, established 1886, in fact, designed many of early Omaha’s buildings including the Douglas County Courthouse and Central High School, not to mention a few buildings down the road such as Memorial Stadium.

The building’s thermos bottle construction and innovative heating and cooling systems were state-of-the-art and earned then Municipal University of Omaha national attention including mention in the New York Times.

For the Regents and the Omaha Community, construction of the building ended a twenty-year struggle to secure a campus with room for expansion and to earn accreditation from the North Central Association.

For more information about UNO’s history, please see *A History of The University of Nebraska at Omaha 1908-1983* by Tommy Thompson, Emeritus Professor of History.



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COLLEGE OF ARTS AND SCIENCES
Office of the Dean



Photo courtesy of Shane Cavlovic

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Ripples of inspiration

At an international symposium on the Crusades in St. Louis, Professor Adrian Boas, the keynote speaker, author of a number of books on the Crusades and Archaeology, was so impressed by the enthusiasm of Martina Saltamacchia's students that he offered to pay for their food and lodging to work on his excavation at Montfort Castle, a crusader castle in Israel's northern Galilee. (See story page 5.) In the photo, left to right, are history majors Matthew Kennedy, Derek Benson and Shane Cavlovic at the dig.

Our thanks go out to Dr. Boas as well as our many donors who support our students in their learning and research adventures each year through generous gifts to the College of Arts & Sciences Fund for Excellence.

If you would like to be part of the fun, please complete and mail the form at left to the following address:

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University of Nebraska at Omaha
6001 Dodge Street
Omaha, NE 68182-0013

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