



the effectiveness of a comprehensive approach working across home and school settings to help children who are at risk for school failure. The research team will be headed by Susan Sheridan, Willa Cather professor and professor of educational psychology, and Carolyn Pope Edwards, Willa Cather professor in the departments of psychology and family and consumer sciences.

There is other good news to report from campus. Although I have a healthy dose of skepticism about the fairness and methodology of the annual *U.S. News & World Report* College rankings, I do understand that many potential parents and students rely on them in making a college decision. This year UNL's ranking improved by four notches among all national research universities, placing it in the top 52 public universities in the nation. Our research efforts, because they are the most visible of what we do, contribute considerably to our "ranking" and thus to our ability to

attract good students to our program.

We also recognize that our continuing success, particularly in these hard times, depends increasingly on your support. Your active involvement in advocating for the importance of the university in the legislative budgeting processes has been invaluable. We are already deeply in your debt. However, we recognize that the Nebraska economy is only slowly recovering and that we may need your help again when the Legislature reconvenes in January. Our pledge to you is that we remain committed to building a quality university — one that helps build a base of skilled young people for Nebraska's future and continues to contribute to the economic growth and quality of life of all Nebraskans.

Harvey Pulman

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THE CHANCELLOR'S REPORT

A report to special friends and supporters of the University of Nebraska-Lincoln

October 2003

Dear Friends and Colleagues:

Last year was certainly a challenging one for your university. We sustained a significant budget reduction at a time when a number of our efforts were showing great promise to move the university's academic programs and reputation to a new level. We were forced to make some very difficult choices, choices that universities are particularly loath to make. We are largely a service organization — we serve our students and the citizens of the State. To reduce our budget meant that we could reduce the quality of the service we provide or we could cut back on the range of services we provide. For the most part we chose the latter course. The result was a very painful process of closing or consolidating programs and terminating valued employees. Nonetheless I believe your university emerged with its remaining programs continuing to be strong and, more importantly, continuing to have the opportunity to get better.

This process caused us to focus on establishing our priorities and the missions that are critical to our future. UNL is a land-grant, research university and both of these descriptors are important. Our land-grant mission imposes a responsibility to make our educational program accessible to the young people of Nebraska and, also, to extend our teaching and research efforts directly to the people of Nebraska. Our research mission imposes a responsibility to attract a faculty capable of working at the cutting edges of their disciplines and to provide them with the facilities and resources necessary for them to pursue their creative efforts, whether in the sciences, the arts, the social sciences, the professions, or the humanities. Can we do all of these things, particularly when resources are declining? We think we can, if we recognize the interrelationships between teaching, research, and service — that rather than three separate missions they describe the output of a focused set of

efforts.

As you may recall, we did everything in our power to protect undergraduate programs of study as we worked through four rounds of state budget reductions in rapid succession. Knowing that the young people we keep in the state of Nebraska will become good workers, earn money, pay taxes and have families, all to the good of our state's economy, we could not, in good conscience, reduce their collegiate program options.

This fall, we're seeing the result of that decision — essentially level enrollment numbers, despite publicity about our budget reduction process, which is, by nature, a public process.

But there's much more to this story than the "head count." UNL's composite ACT score for this year's freshman class is at an all-time high of 24.4. Four of our new students scored a perfect 36 on their ACTs. To put their scores in perspective, approximately 1.7 million high school students take the ACT each year. Of that number, this year 195 scored a 36. These are students who had their pick of any college or university in the nation. For all the right reasons, they decided to attend UNL.

There are many reasons UNL attracted 2 percent of the best students in the nation. Among them is our commitment to undergraduate education and the undergraduate experience. Our university is one of only five research universities in the nation to have been honored for its innovative undergraduate programs by the American Association of Colleges and Universities. That honor came because of focused attention on academic support for students.

Last spring, Rita Kean was chosen to become our first Dean of Undergraduate Studies. Dr. Kean, a professor of textiles, clothing and design at UNL, had been working in the office of the senior vice chancellor to enhance and strengthen our



undergraduate offerings. The UNL Office of Undergraduate Studies is responsible for coordinating, administering, and advocating for campuswide policies and programs affecting undergraduate education, particularly those activities outside the academic degree programs and individual majors, such as the Division of General Studies, the Honors Program and more.

I am asked frequently what academic research has to do with teaching typical college students. The short answer is, “everything.” Research informs our teaching and in many ways guides our outreach activities. We know that the opportunity to conduct research and creative activity under the guidance of our faculty attracts top students to the university.

UNL's signature undergraduate research project is the Undergraduate Creative Activities and Research Experiences (UCARE) program. This fall about 350 undergraduates are working one-on-one with more than 300 faculty mentors on research and creative projects. At many universities, students have to wait until graduate school to have this type of opportunity. For example, Aaron Rinkol of Genoa is working with William Zanner in the School of Natural Resource Sciences on “The Influence of Soil Properties on Ag Chemical Movement through Soils to Water Resources,” and Troy Anderson of Omaha is working with Florin Bobaru in the Department of Engineering Mechanics on “Shape Optimization of Electromagnetic Devices.” Bridget Barry of Raymond is working with Sue Rosowski in the Department of English on an electronic archive of the works of Willa Cather. Stephanie Fisher of Lincoln is working with John West in the Nebraska Center for Virology on HIV research. Plans are under way for a fall undergraduate research symposium, scheduled for November.

The growth in the number of these opportunities for undergraduate research is linked to the growth in research opportunities being generated by faculty as they explore new ideas that often lead to new understanding and inventions. UCARE student projects are funded through the Pepsi Endowment and the Program of Excellence Fund; inspiration and mentoring are supplied by faculty.

A number of our students gained national recognition for their accomplishments in 2003. Among them:

- Megan Spilinek, a senior from Weeping Water, was one of four Air Force ROTC cadets in the nation to receive the Legion of Valor Bronze Cross for Achievement and was one of 76 scholars from 63 institutions to win a coveted Truman Scholarship.

- Mark Stigge, a senior math major from Wichita, Kansas, was one of only 100 students nationwide out of 2,500 applicants to win an inaugural U.S. Department of Homeland Security Scholarship.

- Elizabeth Green, a senior from Lincoln, received a national Barry Goldwater Scholarship awarded to outstanding undergraduates majoring in science, engineering or mathematics. She is one of 300 recipients. More than 1,000 applied.

- Chris Gustafson of Mead, a December 2002 College of Agricultural Sciences and Natural Resources graduate, earned a Fulbright Scholarship to study in Italy.

Consider some of the recent honors and accomplishments of our faculty. The most exciting news was the selection of James Van Etten, the William Allington Distinguished Professor of Plant Pathology, to the National Academy of Science, one of the highest honors that can be accorded a U.S. scientist. Jim is only the third member of the Academy in the history of Nebraska.

Biochemist Stephen Ragsdale, with colleagues at MIT, made a major discovery, reported in *Science*, of a “supercluster” of metals within a single metal.

Dean Sicking and his team at the engineering college, who developed the SAFER barrier used at the Indianapolis 500 and other racetracks, were recognized by *R & D* magazine, which selected the SAFER barrier as one of the 100 most technologically significant products introduced into the marketplace over the past year.

The 28,000-member Institute of Food Technologists gave Food Science Professor John Rupnow its award for teaching excellence. Julie Johnson, professor of family and consumer science, earned similar national honors from the



American Association of Family and Consumer Sciences.

In 2002, Professor of Agribusiness Ron Hanson was the first Nebraskan ever to earn teaching excellence honors from the North American Colleges and Teachers of Agriculture.

Although UNL's state funding has been dramatically decreased, our research enterprise has experienced phenomenal growth. Our research funding from agencies such as the National Science Foundation and the National Institutes of Health has grown 87 percent in the past four years to more than \$84 million in the last year alone. Our total external funding for sponsored programs last year exceeded \$142 million. Increasing external funding for research is very good news for our students and faculty, but it certainly does not make up for the loss of state funding.

Here are notable recent examples of research success stories.

- The National Science Foundation awarded \$5.4 million to UNL nanomaterials scientists to create a Materials Research Science and Engineering Center, one of 27 such elite centers in the nation. The group, led by David Sellmyer, George Holmes Distinguished Professor of Physics and Astronomy, involves an interdisciplinary group of scientists from four UNL departments or schools. In addition, Sellmyer leads a team of scientists comprising the W.M. Keck Center for Mesospin and Quantum Information Systems. The center was established with a \$750,000 grant from the Keck W.M. Foundation and is the first Keck grant awarded in Nebraska.

- Ruma Banerjee, Willa Cather Professor and professor of biochemistry, heads an interdisciplinary team of scientists who comprise the Nebraska Center for Redox Biology. The center, funded by a \$10 million award from the National Institutes of Health, is the first in the nation dedicated to redox research. The team studies redox reactions, the means by which cells harvest energy, and the effects of the by-products of those reactions.

- Scientists in the Nebraska Center for Virology, headed by Charles Wood, Lehr/3-M Professor of Biological Sciences, are looking at

the ways HIV is transmitted between mothers and infants in Africa, where AIDS is pandemic. The center is funded by a \$10.7 million from the National Institutes of Health.

- UNL is the lead institution in a team of scientists from six universities comprising the Nebraska Center for Plant Genomics. Directed by Michael Fromm, center scientists are studying how plants perceive drought and other stressors. The scientists hope to learn how to manipulate the kinases to be able to regulate plant tolerance for disease, drought or cold. The National Science Foundation awarded the center \$6 million in 2002.

- UNL's Biological Process Development Facility, directed by Chemical Engineering Professor Michael Meagher, received \$6.5 million from the National Institute of Allergy and Infectious Diseases for the fast-track development of a vaccine against botulinum neurotoxin, one of the most lethal potential bioterrorism agents. Under the grant, the team will develop within five years the manufacturing processes for a safe and effective vaccine that will protect against all known forms of botulinum neurotoxin. UNL's Biological Process Development Facility is one of the few university facilities in the United States capable of carrying out this work.

- An interdisciplinary team of 15 scientists has received \$1.8 million from the National Science Foundation to conduct a four-year comprehensive study of the 36,000-square-mile Sandhills region in Nebraska. David Wedin, an Institute of Agriculture and Natural Resources ecosystems ecologist, heads the 15-member team for this Sandhills Biocomplexity Project with Geoffrey Henebry, a School of Natural Resources landscape ecologist, and David Loope, a geologist in the geosciences department.

- A \$5 million grant to develop strategies to enhance school readiness in pre-school age children was won by a team of UNL researchers. The University of Nebraska Medical Center and Lincoln Public Schools are project partners in the study titled “Parent Engagement and Child Learning Birth to Five.” The grant, funded through the National Institute of Child Health and Human Development, a division of the National Institutes of Health, is a five-year project to study