

College of Engineering

Strategic Plan Summary

August 30, 2007

The goal of the College of Engineering is to become a consensus top forty engineering college in the U.S. We have moved up 29 positions in the last four years, but at 89th, we still have a long way to go. In order to achieve our ambition, we need to continue to increase graduation rates, especially at the graduate level. In order to do this, we must continue to increase our research productivity so that we can hire additional graduate students. We continue to invest our most precious resources in the acquisition of as many quality faculty members as possible. We believe that this is the most prudent approach to achieve our ambition.

The College is experiencing increasing difficulties in covering the cost of maintaining a quality academic program. This is due to the fact that our state funding continues to lag well behind inflation. To counter this trend, we have transferred as much of our operating budget as possible from state accounts as possible to other funding sources. While this approach has been successful over the past five year period, it is becoming increasingly difficult to fund the College using this approach.

Our main sources of income other than state funding are externally supported research and endowment. While both of these sources are improving at a healthy rate, they will likely not provide all of the revenue necessary to cover the increased costs due to the college's growing student body. For example, while the College has experienced an increase in annual research expenditures from \$11.7M to \$24.9M in the past five years, the College's portion of overhead return has only increased from \$500K to \$1.1M, only half of which is available for College operations. This is not much incentive to do research! Also, while we have successfully attracted a commitment of \$30M to operate the Durham School of Architectural Engineering & Construction, we have not yet realized significant payout from this commitment. Furthermore, early indications are that the funds, when they do become available, will be severely restricted by the oversight committee. It is with the thoughts in mind that the College reports the following strategic initiatives for the coming fiscal year.

Investment in the Materials Engineering Program

The College of Engineering has embarked on a plan to enhance our materials research efforts, especially in the area of nano-materials. This strategy includes a new degree program in materials engineering, which will be jointly administered by the Engineering Mechanics and Mechanical Engineering Departments. For the success of the plan, the Engineering Mechanics Department will hire two new faculty members, with half of the funding provided by an EPSCOR grant. The remaining funding will be provided as a match for the EPSCOR grant by the College, as required in the contract. Mechanical engineering is a mainstay of any engineering college. Over the past half dozen years, ME has not fared well in research, although the Department's student enrollment has remained healthy. It is the College's objective to rebuild Mechanical Engineering into a world class department. This effort includes a focus on the development of the new degree program in the College in Materials Engineering, with its special focus on nano-materials, which, as stated above, is one of the College's strategic initiatives. In order to do this, the College will need to hire a new chair for ME, and perhaps four new faculty members over the

next two to three years. We have interviewed a chair candidate that is ideally suited to lead this effort, and we hope to hire him in the near future. All of these hires would be considered part of a cluster hire in the nano-materials strategic area. However, due to the very limited funds we can expect to have during this year and the next, this effort will likely only be possible if additional resources can be located.

Continued Focus on the Durham School of Architectural Engineering and Construction

The Durham School was successfully launched three years ago. We now find ourselves in a difficult situation, as the promised revenue from the Durham endowment has not yet been forthcoming. This has been particularly troubling for the College's faculty, as they feel that promises made when the school was launched were not kept. Nevertheless, we continue to focus much of our efforts on growing and strengthening the School, which is one of our College strategic initiatives. For this year we plan to continue to focus on hiring a new Director of Construction Management, a search that has been underway for more than a year. We also plan to initiate a search to replace Dr. Kevin Houser, who has resigned from the Architectural Engineering Program. Additional hires may be requested should resources become available from the Durham endowment.

Wireless Technologies

Another area of strategic focus for the College is in communications and devices. The Computer & Electronics Engineering Department, based in Omaha, has had two faculty members resign during the month of August. If the College can replace these two faculty members, we now have an opportunity to continue to grow our expertise in the area of wireless technologies, which is consistent with the College strategic plan. We will hire two new junior faculty members in this area of expertise.

Nebraska Transportation Center

We continue to focus on the development of this new center, with investments made to date have yielded ten to one return. We will hire three new faculty members in this critical area over the next year.

The above efforts cover nearly all of the faculty hires foreseen for the current academic year.