NU Engineering: Kellogg of the '90s?
Funds infusion, infrastructure facelift energize school

By ARSENOIO OLOROSO JR.

In a ground-floor laboratory on Northwestern University's Evanston campus, Manijheh Razeghi, a world-renowned electrical engineering researcher, is building a semiconductor atom by atom.

Despite an explosion two weeks ago in her laboratory, she says she is on her way to developing a new type of laser that can be used in long-distance telecommunications using fiber optic cables.

Welcome to Northwestern University's Robert R. McCormick School of Engineering and Applied Science. Once a sleepy little school, NU's engineering programs are now engaged in a $500 million head-to-head rebuilding.

The objective: To gain the kind of national pre-eminence attained by other NU schools, such as the J. L. Kellogg Graduate School of Management.

Researcher Surendra P. Shah, left, and Dean Jerome B. Cohen: Counting on a new infrastructure focus to boost NU's School of Engineering into the big leagues.

Engineering elite

For now, "Northwestern is not regarded as being in the engineering elite in the way MIT (Massachusetts Institute of Technology) and Cal Tech (California Institute of Technology) are viewed as leading institutions," says Richard Ellis, director of in-house studies at the Washington, D.C.-based American Assn. of Engineering Societies.

But, he adds, McCormick's quest to reach the top "is probably something they could do. They're within shooting range."

The stakes are considerable. Northwestern wants to capitalize on a renewed national focus on science and technology that some estimate will call for the education of more than 60,000 new engineers annually toward the end of the decade.

In addition, McCormick wants to grab a larger share of federal research dollars, which totaled $5.19 billion in 1991, according to the National Science Foundation (NSF).

Chicago corporations, feeling the heat of foreign competition, also have a stake in Northwestern's success.

"We have a strong corporate interest in seeing (McCormick) recruit the kind of student we want in our industry," says Northwestern trustee H. Lawrence Filner, president of Chicago-based Amoco Corp. Amoco is a major donor to the engineering school's $500-million capital campaign, of which $70 million has already been raised.

For its part, McCormick is working on closer links with industry. One example of these closer working relationships is Mr. Razeghi's research to develop more powerful lasers.

Thanks to partial funding by Amoco, Boston-based semiconductor component maker Raytheon Corp. and her former company, France-based Thomson-CSF, Ms. Razeghi has been able to outfit an elaborate laboratory in what was an unused lab six months ago.

Another example is Surendra P. Shah's research at the Center for Science and Technology of Advanced Cement-Based Materials, a research consortium established by the NSF and headed by NU's Mr. Shah.

The center is developing new kinds of concrete for use in rebuilding the nation's infrastructure. Collaborating with Material Service Corp. and the St. Louis-based industry group Portland Cement Assn., the center has been developing a product that could very well be used to repair cracks in Chicago's leaking freight tunnels, a spray-on concrete 10 times stronger than existing concrete.

"We've approached the Chicago Transit Authority to see if they might need it," says Mr. Shah, noting that Chicago's subway system also was waterlogged in the recent Chicago floods.

But he adds that Northwestern has even bigger plans for its materials science department through the new Infrastructure Technology Institute.

Also as part of a concerted thrust to cater to industry's needs, North-