Academia, with its inherent respect for the creative process, is one of the few places where people can be inspired and empowered to initiate change that can have a global impact in a very rapid manner. Many faculty members have experienced, as I have, the dramatically positive impact that an entrepreneurial academic approach can have on students, corporate sponsors, the university, and the surrounding community. I contend that it is in the best interest of our profession, and is an evolving necessity for engineering programs of the 21st century, to foster an attitude and culture on campus that encourages students and faculty members to engage in entrepreneurial activities that bring corporate involvement, institutional and private investment, wealth creation, and a track record of commercial innovation to the university.

Numerous engineering programs have cultivated highly successful relationships that have spawned local industries and brought continually renewed resources to campus. Stanford has probably been the most successful university. Recent spin-offs such as Rambus, Yahoo, eBay, and Aetherson are just a few examples. Other companies, such as National Instruments (University of Texas), Broadcom (UCLA), FORE Systems (Carnegie Mellon), Scientific Atlanta (Georgia Tech), Dell Computers (University of Texas), Bose (MIT), and Fritzer and Associates (Purdue) can all trace their roots to local universities and have since been active participants in the growth of the engineering programs at their mother campuses.

Many universities are taking aggressive actions to foster a culture of spin-off successes. At Princeton, start-up companies are actively encouraged by the administration, and the university receives equity in exchange for a partnership with faculty members and student entrepreneurs. At Purdue, a new program brings local and state venture-funding agents to the campus on a regular basis to help spawn university spin-outs at a local research park. At Virginia Tech, an expanding corporate research center provides a high-tech haven for local spin-off companies. And just recently, venture investors have been given offices and access to intellectual property disclosures on campus. The list goes on.

To make it work, universities often have to review and rewrite university regulations for faculty and student participation in companies. And they must undertake the process of crafting and ratifying university governance guidelines that allow for managing potential conflicts of interest, rather than prohibiting such conflicts. Generally, faculty members and student entrepreneurs must disclose their external engagements and agree to reasonable limits of time for their participation in these enterprises while receiving the university's open support for such activities. Some universities are even considering counting entrepreneurial pursuits as a positive activity in a professor's annual report, and most enlightened universities grant periods of leave for entrepreneurial faculty members who are early in the start-up process.

The vision and commitment for the entrepreneurial culture must come from the top down. At today's leading entrepreneurial universities, it is commonplace for the dean of engineering or a department head to serve as a technical or business advisor on start-ups founded by faculty entrepreneurs. In fact, at the University of Maryland and UCLA, electrical engineering department heads have successfully founded high-tech companies with the full and public blessing of the university administration.

As this type of culture becomes increasingly important to the academic process, it will become vital for public engineering programs that face increasingly large budget shortfalls and intense competition in attracting talented faculty members and students to hop on the bandwagon. The ability to build local companies that can create wealth and become involved on campus will be key to maintaining academic quality, particularly for programs in remote areas. Throughout academia, entrepreneurial faculty members have had a huge impact on their institutions and their region, and universities need to recognize, embrace, and foster these kinds of activities, just as Stanford did more than 60 years ago when it began the transformation from a regional program to Silicon Valley—a world leader in engineering.

This is an excerpt from a speech by Theodore S. Rappaport upon acceptance of the 2002 Frederick E. Terman Award, which is sponsored by Hewlett-Packard, Rappaport is the William and Bettye Nowlin Chair of Engineering at the University of Texas-Austin. He can be reached at trappaport@asee.org.
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