Privatizing Public Research Universities: Experiences at the University of Nebraska-Lincoln

Kimberly Andrews Espy
Associate Vice Chancellor for Research
University of Nebraska-Lincoln

To consider the impact of privatization on public universities, it is critical to understand their history and what led to the creation of public research universities. Universities were created in Europe and the United Kingdom in the 11th century to bring together faculties of diverse disciplines for comprehensive education and training. Later came the recognition that one fundamental aspect of education and training is the discovery of new knowledge and inquiry—namely research. In the U.S., the Morrill Act of 1862 that established the Land Grant university system was predicated on the notion that it is in the public's best interest to provide high-quality, widely accessible higher education to the "common people."

Currently, public universities provide higher education to 77% of all post-secondary school students. These numbers attest that the model of comprehensive education widely available to the citizenry, focused on inquiry and new knowledge generation, is effective. In fact, public research universities have contributed substantially to the transformation of our economic system from agrarian to industrial, and then from industrial to knowledge-based. Because research conducted at public research universities is funded by public investment independent of the market or other parties with substantial vested private interests, one under-considered aspect of public research universities is the progressively developed and deep-seated public trust in the integrity of research and in the institution, more broadly.

In keeping with the public trust model, the intent of the Bayh-Dole Act (1980) was to accelerate the progress of moving research outcomes into useful products, services, and information in order to better serve the interests of the public, who essentially funded the research. The simple strategy was to ascribe ownership of research outcomes to the public research university in order to create better incentives to spur the vested parties to perform. Concomitantly, economic development became a central tenet of the mission of public research universities, including the University of Nebraska-Lincoln (UNL). As a result, industry supported research has risen an average of 8% per

annum nationally, with a similar increase observed at UNL.

Importantly, the intent of Bayh-Dole was not meant to address university revenue streams specifically, as in that era most public research universities received more than half of their budgets from state appropriations. With progressive (and recently steep) declines in state appropriations and rise in the number of enrolled students, enhancing industry-sponsored funding for research and other academic activities has become an important source of revenue to potentially counterbalance other revenue reductions. These forces are particularly acute for universities in the Great Plains states like Nebraska that have comparatively fewer college-age students from which to draw and historically have been under-priced relative to costs.

The explicit benefits of industry sponsorship have been substantial. At UNL, for example, the percentage of research awards sponsored by industry has doubled in the last 5 years, which is particularly compelling given that total sponsored funding in actual dollars also has doubled in this same period. There is no doubt this funding has added value to existing Nebraska companies through licensing, has enhanced private-public partnerships and collaborations, and has created start-up ventures. More simply, enhanced research funding, be it from any source, increases local economic development through job creation that provides opportunities for creating and retaining a highly educated workforce. Taken together, research outcomes have been transferred more rapidly into the private sector. Greater economic opportunities have been provided for local Nebraskans; this has fostered greater quality of life and promoted technological innovation.

Although less well recognized, there also have been more implicit benefits that have resulted from the trend towards "privatization." Industry sponsorship and shared ownership in the research outcomes has fostered new perspectives in university management that have increased the diversity of ideas and lead to greater efficiencies. Public research universities have adopted a business model to varying degrees and in varying segments, which has sharpened the focus of many universities and their programs. This model also has enabled deriving a more specific institutional mission and has resulted in more efficient service delivery to students, staff, and the public.

There also are real costs to this "privatization" approach. Technology transfer and economic development are labor intensive and legally complex. For many universities, these costs exceed the revenues that are generated from industry sponsorship and licensing. At UNL, outside legal fees over the past three years have increased nearly 20% each year. Because the public state taxpayers are now "minority stakeholders" in the research enterprise, the benefits also are distributed more diffusely. That is, some benefits are accrued directly to private companies who are not charged to best represent the public's interests, but rather to represent those of its shareholders. Concomitantly, academic units whose mission is strongly depdendent on

public support and largesse (often the arts and humanities) fear "downsizing" because of less availability of industry and federal grant funding relative to science- and technology-based disciplines.

There also are under-recognized implicit costs of privatization. Conflicts of interest in private-public partnerships are endemic to such collaborations, and these conflicts of interest have not always been well managed. Although the researcher, private industry, and university now have a common vested interest in the research outcome as a result of Bayh-Dole, their other interests and constituencies are not necessarily shared, which can create conflicts and tension. Industry interests are to maintain proprietary rights to research outcomes in order to maintain their own competitive advantage relative to other private companies in the same market. Proprietary rights and concomitant non-disclosure can be at odds with the long-standing tradition of university academic freedom and public dissemination of findings. Within the public research university, the university's interest to gain financial benefit by restricting access to research outcomes through patents and licensure can conflict with its responsibilities for public access and community stewardship.

Finally, researchers have a vested interest in outcomes, as consulting income, licenses, royalties, etc., depend on favorable conclusions, which can engender latent biases. The effects of such biases are greater in research outcomes in the health and human sciences, where the scientific phenomena require statistical inference and human judgment. Cognitive science can help to clarify how these implicit biases might affect research outcomes. Sensitivity to incentives and rewards do vary among individuals (e.g., Knutson & Cooper, 2005), but typically do not lead to data fabrication or falsification (Martinson, Anderon, & DeVries, 2005). Rather, incentives contribute more commonly to the intrinsic lens or interpretive framework the researcher utilizes to approach, understand, and present data and findings.

One of the best studied contexts germane here is the effect of pharmaceutical perquisites on physician attitudes, information recall, and behavior. It has been well documented that the majority (61%) of physicians do not believe that gifts, meals, travel, honoraria, etc., influence their prescription practices, and at the same time, do believe that such perquisites affect the prescription practices of the majority (84%) of other physicians (Steinman, Shlipak, & McPhee, 2001). Physician recall of drug-related information also is affected by pharmaceutical benefits. Inaccurate information recalled was much more likely to be favorable to the promoted drug; where for non-promoted drugs, all information recalled was accurate, but none was favorable to the promoted drug (Ziegler, Lew, & Singer, 1995). Finally, recent findings indicate a direct relationship between the onset of pharmaceutical sales promotional visits and the onset of the promoted drug medication starts, as well a relationship between the frequency of sales visits and the number of patients started on the

promoted medications (Schwartz, Kuhles, Wade, & Masand, 2001). Given the impact of physician attitudes, information recall, and behavior, it is not surprising that authors of industry-funded research projects are 3.6 times more likely to report a finding favorable to industry than are those not funded by industry (Bekelman, Li & Gross, 2003), or that although at least 30% of faculty have conflicts of interest that are related to their research, as low as 2% of faculty report them (Warner & Gluck, 2003). Most universities, scientific journals, and the federal government use disclosure of conflicts of interest as the main mechanism for the public consumer to evaluate the validity of scientific claims in light of the vested private industry interests. Perhaps it is time to formally evaluate the efficacy of these disclosure policies, particularly as less than half of investigators can describe accurately their institution's conflict of interest policies (Boyd, Cho, & Bero, 2003).

In conclusion, private industry sponsorship of research activities has led to substantial economic benefits, both nationally, locally, and specifically at the University of Nebraska-Lincoln. A cautionary note—"privatization" puts at risk the steadily built, longstanding public trust, support, and confidence in the integrity of public research universities and its research outcomes. Without enhanced management of the inherent conflicts of interest that accompany industry sponsorship of research, there is a risk of rapidly eroding the "social compact" between universities and their publics, upon which premier public research universities have been built.

Reference

Bekelman, J.E., Y. Li, and C. P. Gross. 2003. Scope and impact of financial conflicts of interest in biomedical research: A systematic review. *Journal of the American Medical Association*, 289:454-465.

Boyd, E. A., M. K. Cho, and L. A. Bero. 2003. Financial conflict-of-interest policies in clinical research: Issues for clinical investigators. *Academic Medicine*, 78:769-774.

Kirp, D.L. and E. P. Berman. 2006. The Good Deal. *University Business*, August issue. http://www.universitybusiness.com

Knutson, B., and C. Cooper. 2005. Functional magnetic resonance imaging of reward prediction. *Current Opinion in Neurology*, 18:411-417.

Lyall, K. and K. Sell. 2006. The De Facto Privatization of American Public Higher Education. *Change*, Carnegie Foundation for the Advancement of Teaching, http://carnegiefoundation.org/change/

Martinson, B., M. Anderson, and R. DeVries. 2005. Scientists behaving badly. *Nature*, 435:737-738.

Schwartz, T., D. Kuhles, M. Wade, and P. Masand. 2001. Newly admitted psychiatric patient prescriptions and pharmaceutical sales visits. *Annals of Clinical Psychiatry*, 13:159-162.

State Higher Education Finance FY 2005 Executive Overview, State Higher Education Executive Officers, http://www.sheeo.org

Steinman, M., M. Shlipak, and S. McPhee. 2001. Of principles and pens: Attitudes and practices of medicine house staff toward pharmaceutical industry promotions. *American Journal of Medicine*, 110:551-557.

Warner, T. D., and J. P. Gluck. 2003. What do we really know about conflicts of interest in biomedical research? *Psychopharmacology*, 171:36-46.

Washburn, J. 2005. *University, Inc*. (Basic Books: Jackson, TN).

Zeigler, M., P. Lew, and B. Singer. 1995. The accuracy of drug information from pharmaceutical sales representatives. *Journal of the American Medical Association*, 273:1296-1298.