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Defining Tech Transfer

from

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What is technology transfer?

Technology transfer describes a formal transferring of new discoveries and innovations resulting from scientific research conducted at universities to the commercial sector. One way universities transfer technology is through patenting and licensing new innovations. The major steps in this process include: 1) disclosing innovations; 2) patenting the innovation concurrent with publication of scientific research; and 3) licensing the rights to innovations to industry for commercial development.

Prior to 1980, fewer than 250 patents were issued to U.S. universities each year and discoveries were often not commercialized for the public's benefit. Today, U.S. universities are issued an average of almost 1,500 patents per year. Moreover, more than 200 universities are engaged in technology transfer, eight times more than in 1980.

Why has there been such growth in technology transfer programs?

This success, and the resulting economic and health benefits, is the direct result of the 1980 Bayh-Dole Act. This legislation, cosponsored by Senators Birch Bayh and Robert Dole, enabled universities, nonprofit research institutions, and small businesses to own and patent inventions developed under federally funded research programs. The Act provides an incentive for universities to market their innovations and for industry to make high risk investments.

What are the benefits of improved technology transfer?

University technology transfer, specifically, the licensing of innovations, adds more than $21 billion to the economy and supports 180,000 jobs each year. It helps create new businesses and industries and open new markets. Moreover, it has led to new products and services that save lives, reduce suffering, and improve quality of life.

How do universities use the royalties earned from licensing?

These royalties help advance scientific research and education through reinvestment in the academic enterprise. The royalties are given, in part, to university research departments to provide new opportunities for graduate students, buy research equipment, and fund new research. These funds also help sustain the technology transfer process by paying for a portion of the legal fees associated with patenting and licensing as well as for technology management staff. And finally, as the Bayh-Dole Act requires, a portion of the revenues is shared with the university inventor.

What are some of the successes of technology transfer?

New discoveries at U.S. universities have been successfully transferred to help spawn the biotechnology industry and have led to advances in the medical, engineering, chemical, computing, and software industries, among others. Diagnostics tests for breast cancer and osteoporosis, faster modems, new Internet search engines, environmentally sound technologies, and safer guardrails list among the many products developed as a result of licensing university innovations.

How do universities measure success in technology transfer?

Technology transfer through licensing is a relatively new field, so reliable success indicators have not yet been established. However, measures used to date include: the number of inventions disclosed, the number of patent applications filed, patents issued and licenses consummated, the amount of licensing revenue, and the number of commercial products produced and sold. More intangible, but certainly as important, measures of the success of technology transfer include a university's capability to retain entrepreneurial faculty and attract outstanding graduate students; its reputation for innovation; the enhancement of university research; and its reputation for providing highly trained students for the industrial workforce. The marketplace impact of university-originated products and technology is unquestionably a major component of success.

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