

The Bayh-Dole Act: Important to our Past, Vital to our Future

“Possibly the most inspired piece of legislation to be enacted in America over the past half-century was the Bayh-Dole act of 1980... More than anything, this single policy measure helped reverse America’s precipitous slide into industrial irrelevance.”
Economist Technology Quarterly, Dec. 14, 2002

American academic centers performed more than **\$40 billion in research** in 2005. Most of this was basic research where cutting-edge discoveries are most likely to occur. It is precisely this long-range research that U.S. industry has discontinued, focusing on shorter range applied research. Linking these two complementary sectors together provides a key competitive advantage to the U.S. economy and U.S. competitiveness in a global marketplace.

But it wasn’t always this way...

1970’s Query: Are Our Best Days Behind Us?

- Double-digit inflation and double-digit unemployment;
- Industrial heartland becomes the Rust Belt;
- Experts predict loss of the U.S. lead in high technology to Japan and Germany;
- U.S. universities performing R&D, but few inventions commercialized.

Before enactment of Bayh-Dole in 1980, discoveries made on campus with federal funding lay fallow because the federal government embraced a policy of taking title to all such inventions and licensed them on a non-exclusive basis. The vast majority of university inventions are very early stage discoveries that require substantial investment to be developed into products. Thus, with the inadequate protection against competition afforded by a non-exclusive license, companies could not justify investing the significant amounts of time and money necessary to turn them into products. At the time the Bayh-Dole Act was passed in 1980, the federal government held title to approximately 28,000 patents, of which fewer than 5% were licensed to industry for development of commercial products according to the GAO report “Technology Transfer, Administration of the Bayh-Dole Act by Research Universities,” issued on May 7, 1998. *This meant that billions of dollars invested by American taxpayers in cutting-edge research were not being effectively utilized.*

According to the *Congressional Research Service* report “**The Bayh-Dole Act: Selected Issues in Patent Policy and the Commercialization of Technology**” (Dec. 8, 2006) more than anything, the certainty of ownership of intellectual property has contributed to the success of the Act.

The Bayh-Dole Act: It's Good Policy.

- Allows universities and small companies to own inventions they make with federal funding.
- Funding agencies can use these discoveries royalty-free for their own purposes.
- Universities are allowed to partner with industry to translate research results into products benefiting the public.
- Preference is given to small businesses and to those making products in the U.S.
- Resulting university licensing income is invested in more research, rewarding university scientists and supporting technology transfer offices.
- Operation under the Act keeps the inventors actively engaged in the technology transfer process which is critical for companies to enable products for public use.

It's Good for the U.S. Economy:

- The U.S. is the leader in basic and applied research and is a leader in applying research and innovation to improve economic performance.
– **The Gathering Storm**, *National Academy of Sciences*, (Feb. 2006).
- University research helped create whole new industries, such as biotechnology, where the U.S. enjoys a leadership role.
- Since enactment, more than 5,000 new companies have formed around university research results -- the majority located in close proximity to the university.
- University patenting has exploded from just 495 issued patents in 1980 to 3,278 in 2005.
- In 2005 alone, universities helped introduce 527 new products to the marketplace. Between 1998 and 2005, 3,641 new products were created.
- ***University technology transfer creates billions of dollars of direct benefits to the U.S. economy every year.***
- According to the former President of the NASDAQ Stock Market, an estimated 30% of its value is rooted in university-based, federally-funded research results, which might never have been commercialized had it not been for the Bayh-Dole Act.

It's Good for the Public:

Significant benefits for public health and well being are derived from technologies developed under the Bayh-Dole Act, such as:

- Synthetic penicillin
- Hepatitis B vaccine
- Citracal calcium supplement
- Cisplatin and carboplatin (cancer therapeutics)
- Human growth hormones
- Treatments for Crohn's disease
- Avian Flu vaccine
- Clean water technologies

In the meantime, academic research remains strong:

Researchers in the United States lead the world in the volume of articles published and in the frequency with which these papers are cited by others. U.S.-based authors were listed in one-third of all scientific articles worldwide in 2001.

– **The Gathering Storm**, *National Academy of Sciences*, (Feb. 2006).

And It's Good for Our States:

- *“Numerous studies have shown that anchors of fast-growing, technology-oriented economies are major research universities interacting with a robust technology oriented private sector... Studies by the U.S. Department of Commerce's Office of Technology Policy and others have found that all areas of technology-based economic development in the U.S. have strong concentrations of both university and private research. A Milken Institute study found that research centers and institutes are “undisputedly the most important factor in incubating high-tech industries.”*
– **State Science and Technology Institute**
- University patenting contributes to the most consistent measure of technological advances. According to a study cited in the **2005 Annual Report of the Federal Reserve Bank – Cleveland**, patent activity within a state may be the most important indicator of per capita income. *“For example, patents might be a proxy for success in commercialization of technology.”*

Every state is a real beneficiary of the Bayh-Dole Act!

But We Can't Take Future Success for Granted...

- The United States has already entered into an era where we face new challenges to our technological competitiveness.
- Our international competitors are taking aggressive steps to leap frog our model by combining their own cutting-edge university research with low cost manufacturing.
- This is no time to weaken the Bayh-Dole Act!

CONCLUSION

“The Bayh-Dole Act (Public Law 96-517) has made substantial contributions to the advancement of scientific and technological knowledge, fostered dramatic improvements in public health and safety, strengthened the higher education system in the United States, served as a catalyst for the development of new domestic industries that have created tens of thousands of new jobs for American citizens, strengthened States and local communities across the country, and benefited the economic and trade policies of the United States.”

- **Sense of Congress resolution** passed by the U.S. House of Representatives on December 6, 2006