

## The Good Steward – Turning Federal R&D into Economic Growth

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## Written by The Honorable Birch Bayh

## United States Senator (1962-1980)

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What should we say about a steward that manages billions of dollars in public research funds not aimed at finding commercial products and turns them in to hundreds of billions of dollars in economic impact while supporting millions of jobs?  You would think that a sincere “thank you” was in order.  But many are saying that the system producing such riches is broken.  Remarkable.

Circa 1980: Senator Birch Bayh (right) and Staffer Joseph Allen (left) in a Bayh-Dole hearing.

A new study shows that this spinning of straw into gold is precisely what our academic research organizations have been quietly doing year after year.  The just released report “[**The Economic Contribution of University/Nonprofit Inventions in the United States: 1996-2010**](http://www.bio.org/sites/default/files/BIOEconomicImpact2012June20.pdf)” provides a much needed dose of good economic news when we sorely need it.   It shows that the university/industry R&D partnership created by the Bayh-Dole Act of 1980 is essential to our economic growth while protecting public health and well-being.

Before 1980, inventions made with federal support were commonly taken away from inventing organizations and made freely available in Washington. Not surprisingly, such a system dampened the “fuel of interest added to the fires of genius” that President Lincoln (a patent owner himself) said was the intent of our patent system.  More than 28,000 government funded inventions lay wasting away on the shelves of the bureaucracy.

During an election year every bit as contentious as this one, Senator Bob Dole and I decided that such waste had to stop.  We crafted a bill cutting out the bureaucracy that was strangling academic and small business innovation. It gave ownership of inventions to nonprofit organizations and small companies engaged in federally supported R&D to restore the incentives needed for commercialization, provided that the federal agencies could use them for government purposes, and gave preferences in licensing university inventions to small businesses and those who would make resulting products in the U.S.

The Bayh-Dole Act created no new bureaucracy, costs taxpayers nothing, and decentralized technology management out of Washington.  It’s widely touted as a key in turning the U.S. economy around from the doldrums we were in 30 years ago. It continues to keep American innovation on the cutting edge today.  But up until now, we didn’t have solid data on how much of a contribution the Bayh-Dole Act has made to the overall economy.  Academic research is one of our most effective “secret weapons” keeping America competitive– and now we have hard numbers buttressing that assertion.

The report analyzed data on patented inventions licensed under Bayh-Dole  between 1996 and 2010.   It found that patents commercialized from university and nonprofit organizations (supported mainly by federal R&D dollars) contributed as much as:

* **$836** **billion** to the US gross domestic output;
* **$388 billion** to the US gross domestic product; and supported
* **3 million** “person years of employment.”

During this period, federal investments in academic research averaged approximately $25 billion a year, mostly for basic research.  This is important to keep in mind.

The Bayh-Dole Act did not change the traditional emphasis of federally funded research on campus. It remains geared primarily toward pushing forward the frontiers of knowledge.  Basic research is where revolutionary new industries are created, but it is so far away from the commercial marketplace and so risky that industry has largely abandoned it. Luckily for us, the Bayh-Dole Act allows our private sector to partner with academia transforming research concepts into new products useful to the taxpayer.  All of the resultant development risk and expense (many times what the government invested initially) is borne by the private sector.   In the development of new drugs, it takes more than a decade and billions of dollars for such transformations to take place.  If the project fails, it’s the company which takes the hit.  Technology transfer is no place for the faint of heart!

Our system works.  The biotechnology industry spun out of federally funded academic research which entrepreneurs turned into unimagined new products and vibrant new companies.

Our foreign competitors such as China and India are trying to copy the Bayh-Dole model to better compete with us in the technology race defining the 21st Century.  It’s ironic that with success staring us in the face some insist on poor mouthing university technology transfer, insisting that we veer off onto unproven trails.  We would be foolish to follow such counsel.

The concept of stewardship of public resources is deeply ingrained in our culture, though perhaps not as widely practiced as we might wish.   Rather than ignoring –or abusing — those who perform such duties largely out of sight, it seems more fitting to say to our university technology transfer system: “Well done, my good and faithful servant.” They’ve performed public stewardship of the highest order.

**About the Author**

[**Senator Birch Bayh**](http://www.venable.com/birch-bayh/) is a partner in the Legislative and Regulatory Group of Venable’s Government Division. He has a deep and thorough understanding of the legislative process, having represented the State of Indiana for 18 years in the U.S. Senate, followed by a 20 year law career representing individuals, corporate clients, and public entities before all three branches of government.

Senator Bayh was a Member of the United States Senate from 1962-1980. During his Senate career, he authored two Amendments to the Constitution – the Twenty-fifth Amendment on Presidential and Vice Presidential succession, and the Twenty-sixth Amendment lowering the voting age to 18 years of age. He is the author of Title IX to the Higher Education Act, which mandates equal opportunities for women students and faculty; co-author of the Bayh-Dole Act, which revitalized the nation’s patent system. *The Economist* has referred to the Bayh-Dole Act as the most influential and successful piece of domestic legislation in the post World War II era. The Bayh-Dole Act was revolutionary in its outside-the-box thinking, creating an entirely new way to conceptualize the innovation to marketplace cycle. It has lead to the creation of over 7,000 new businesses based on the research conducted at U.S. universities.

For more information about the Bayh-Dole Act please see: [**Bayh-Dole - 30 Years**](http://www.b-d30.org/).