



School Power: The Case for Keeping Innovation in the Hands of Universities

Apr 11 2012

America's University-innovation engine is the envy of the world. Let's not change that.

By Senator Birch Bayh and Joseph P. Allen



Wikimedia Commons

There's no shortage of things to worry about as we strive to revive America's innovation engine. Oddly, much time and money is going into pushing a proposal jeopardizing the foundation for our university/industry R&D partnerships. This is one place where we clearly lead the world.

The reason for our success is the Bayh-Dole Act of 1980. The law created no new bureaucracy, and costs taxpayers nothing. It decentralized management of

federally funded inventions out of Washington into the hands of universities and small companies creating them. It literally changed the world. A *Wall Street Journal* article touted Bayh-Dole as one of the “Three Policies That Gave Us the Jobs Economy.”

Like the little engine that could, Bayh-Dole keeps quietly chugging along moving our economy forward. Strangely, the Kauffman Foundation decided it has been running on the wrong track. They urge policymakers in Washington to remove technology management from the universities and place it in the hands of academic inventors. They can present no evidence that this would improve commercialization rates of new technologies while ignoring warnings that it would harm our competitiveness. Tragically, some in Washington seem to be buying their message.

Power To The Schools

Passed during a contentious election year, Bayh-Dole insures that taxpayers receive the full benefits from the billions of dollars invested in public R&D. Previously the government took inventions away from university and small company contractors making them readily available to all. The system destroyed the incentives of the patent system. The result: 28,000 discoveries gathering dust in Washington, and not a single new drug developed when the government took the patent.

Bayh-Dole reversed this wasteful practice allowing universities and small companies to own and manage their discoveries. More than 6,000 new technology companies have since spun off campus. University patents created more than 5,000 new products, including breakthroughs protecting public health world-wide. Conservative estimates show university patent licensing contributing \$457 billion to US gross industry output over twelve years while creating 279,000 good paying jobs.

Nowhere are university-industry partnerships more important than in the life sciences, an area critical to our health-- and our wealth. Developing new drugs can take more than a decade, sometimes costing \$4 billion to \$11 billion per drug by some estimates. As the cost and delays in approving new drugs increase, profit margins are being squeezed.

Companies are now hollowing out U.S. research staffs, moving operations to India and China. That does not bode well for our life science industry. Its future depends to a large degree on tapping into university research. Under Bayh-Dole at least 153 new drugs, vaccines or medical devices are fighting the scourge of disease.

The World's Greatest

This is hardly the time to throw a monkey wrench into the university technology management system. Yet this is precisely what the Kauffman Foundation proposes.

Under their plan, academic inventors would be in charge of managing federally funded inventions, not the university that receives the grant and pays them (and to which they assign invention rights as part of their employment). Researchers would shop their inventions around looking for licensing agents in other schools. For unexplained reasons this chaotic system is supposed to speed up commercialization. The idea was adopted in the report of President Obama's Jobs Council, and is included in the newly introduced Startup Act in the Senate.

Our current system allowing universities to manage their technologies, while not perfect, is by far the most effective in the world. If imitation is the most sincere form of flattery, we should be very flattered, indeed. Japan, South Korea, China, India, South Africa and others are adopting Bayh-Dole models to better compete with us. The reason is simple: Bayh-Dole works. Empowering the university making the invention with its management allows it to hire experts in assessing, marketing, and managing inventions focused on its core research strengths. What central planner could have imagined that the University of Utah would lead the nation in creating spin-off companies?

Bayh-Dole makes the university a steward of the public interest. The emphasis is not on enriching the university, but on moving inventions from the lab into the marketplace. Universities must share resulting royalties with their inventors, and most have been very generous doing so.

Bayh-Dole requires universities to give preferences to those who will manufacture resulting products in the U.S. and to small businesses-- not to those who will pay the most money. More than 70% of university licenses go to small companies;

normally those most willing to take the risks needed for bringing revolutionary new products to market.

If only the inventor is in charge of licensing the invention, this broader community of interests could be lost to the temptation to maximize immediate profits.

Black Swan Breakthroughs

The Kauffman concept is based on the belief that leading universities will take on inventions from other schools. That is not the case. MIT, Stanford, and the Wisconsin Alumni Research Foundation wrote to the Department of Commerce saying: “It would be inappropriate for us to handle inventions from inventors outside our own institutions, and we would have no interest in doing so.”

And for good reason.

Technology transfer is a service provided to the faculty, not a profit center. Patent management is expensive. It takes years for university inventions to reach the market. Even successful discoveries are unlikely to make significant money in the short run. Thus, someone must pay the upfront costs. Universities are certainly not going to do so for inventions made elsewhere. Since academic inventors are unlikely to foot the bill, who will?

If inventors turn to outside firms who will license for a share of royalties, only the lowest hanging fruit may be commercialized. They will not bother with breakthroughs like biotechnology where decades were needed for commercial products to appear. Finally, most academic inventions have more than one inventor. If the Kauffman idea were adopted, which decides how the patent is managed?

Pesky practical details like these are simply ignored by Kauffman and its advocates.

To those who have never commercialized a university invention, it appears a simple task. They imagine companies beating down the doors looking for the next big thing. The reality is greatly different. Universities have to work hard to market their discoveries. The odds of success for a given technology are small. This is no place for the faint of heart.

The federal government funds universities mainly to conduct basic research. While this is where breakthrough technologies are most likely to occur, these discoveries are far removed from being commercial products. Our private sector abandoned basic research for this reason. Luckily, Bayh-Dole bridges the gap. Industry pays the costs-- and assumes the risks-- of taking university discoveries from the lab into the marketplace.

China just announced a 26% increase in basic research funding. We abandon the Bayh-Dole model at our peril.

Some things are just hard to do. The very best baseball players fail to hit 70% of the time. Hitting a fastball appears easy watching on TV. But the view from the batter's box is quite different. If you want to improve a system, it's best to ask those actually playing the game—not those yelling from the stands.