

Remarks of Joseph P. Allen to the International Visitor Leadership Program

October 16, 2026

I want to let you know how delighted I am to speak with you today. I have more than a passing interest in South Africa's success with its Bayh-Dole law. Almost 20 years ago, I was contacted by some friends at the National Institutes of Health. They said a delegation from South Africa was doing a worldwide tour looking for best practices in commercializing university inventions and wondered if I could speak with them about how our Bayh-Dole law works.

I said that I'd be happy to, but I don't live close to the NIH, and as those were the days before Zoom meetings, we just talked by phone. Then several months later, I received an email from South Africa asking if I would come over and speak as they had identified Bayh-Dole as a best practice. As you know all too well, it's a long flight from here to there, and as I stumbled off the plane, I was met by McLean Sibanda. I assumed that I was meeting with a delegation like yours, but he informed me that I was the lead witness before your parliament as they considered adopting their version of the law.

The hearing went well, and not long after the bill was passed, I advised the government on the implementing regulations. So, I have a real interest in learning how the law is working after all this time.

What I'd like to do this morning is share some thoughts about how and why our law works and spend the remainder of our time discussing with you how South Africa is doing in transferring academic research to industry.

You've come at a particularly good time. The Bayh-Dole Coalition just issued a [study](#) on the economic impact of the law on the U.S. economy. Here, like in South Africa, our political leaders, the media, and the public want to know how taxpayer supported R&D is being managed so it helps both the economy and our quality of life.

As you can see, even in an economy as large as the United States, the numbers are impressive. Over the past 30 years, academic technology transfer has contributed up to \$3.3 trillion to our economy. Our report is an update on a previous one using similar

methodology incorporating five additional years of data through 2025. The last report found a \$1.9 billion contribution, so that number has almost doubled in 5 short years.

The law also supports as much as 7.6 million job-years, which evaluates to one year of full-time employment for an individual. Perhaps most importantly, this system helped launch more than 19,000 new companies in 25 years while bringing more than 17,000 new products to market—some of which were [groundbreaking discoveries](#) leading to Google, Nobel Prize-winning discoveries in cancer research and mRNA, among many others. Even more importantly, the law has literally saved millions of lives around the world with treatments for AIDS and HIV.

So, what were the keys to this success? First of all, we learned through hard experience that trying to centrally manage academic and small business inventions didn't work. Before Bayh-Dole, our government generally took ownership of inventions made with its support and tried to license them without involving the inventors or their institutions. Even worse, we ignored the importance of strong patent protection to commercial developers, without which they can't protect the substantial amounts of time and money it takes to turn a government supported invention into a new product.

And those costs and risks are quite high. It's [estimated](#) that for every dollar the government invests in research leading to a life science innovation, companies spend \$100 on development. And in drug development, the odds against success are daunting. Only around [10%](#) of the compounds made in the laboratory are turned into successful drugs, and those which succeed, must pay the expense of the others which die in the development process.

The Bayh-Dole Act was drafted by two remarkable people who had seen the failure of the old system firsthand. Norman Latker was the patent counsel at the National Institutes of Health. He was well aware that potentially important discoveries were being made, but few had become successful products when the government owned the invention.

Howard Bremer was the patent counsel at the Wisconsin Alumni Research Foundation, the grandfather of academic tech transfer institutions in the U.S. In the 1920s, it had [licensed](#) an invention fortifying foods with Vitamin D. Like Norm, Howard was frustrated seeing

promising discoveries at the University of Wisconsin taken away where they only gathered dust on the shelves in Washington.

Those experiences led to the founding principles of the Bayh-Dole Act:

- Technology ownership and management was decentralized from the government into the hands of academic institutions and the small businesses which created them.
- They were allowed to license them while giving preferences to American small companies and those who would manufacture resulting products in the United States.
- Academic institutions were required to share any royalties made from successful commercialization with their inventors to incentivize them to identify and help develop promising discoveries they made
- Remaining royalties must be used for paying technology transfer costs and funding more research.
- Inventions must be reported to the government agencies which funded them. The agencies could use them royalty free to meet their mission needs.
- Academic institutions must license their discoveries “on reasonable terms” conducive to commercialization and monitor their licenses to ensure that good faith efforts are being made to develop them.
- If that is not done, the funding agency can “march in,” requiring the university to license others or do so itself if the university refuses. By the way, in our 45 year history of the law, that’s never been necessary.

The law was passed overwhelmingly in 1980, but two other events happening at the same time contributed to its success. Our Supreme Court [ruled](#) that man-made microorganisms were patentable. Also, our Congress strengthened our patent laws, which is critical for entrepreneurs.

It was a breakthrough in biotechnology that helped launch Bayh-Dole. The University of California and Stanford produced the Boyer-Cohen process enhancing biotech production. At first, no companies were interested, but Stanford licensed it on such reasonable terms

that a trickle of non-exclusive licenses were made—and when companies learned that their rivals had taken one, the trickle turned into a torrent.

And something unexpected happened. Small companies began spinning off campus, driving the U.S. biotech industry. Before Bayh-Dole, we lagged behind the United Kingdom and Japan, but soon we took the lead in biotech and remain the dominant force today, although China is looking to replicate our model.

As our report shows, about 70% of university licenses are with small companies. Many of them are formed by academic inventors like Eric Fossum and Sabrina Kemeny.

Fossum and Kemeny were working at Caltech's Jet Propulsion Laboratory when NASA [funded research](#) for a lightweight camera for space exploration. The team discovered the "camera-on-a-chip," and under Bayh-Dole, Caltech patented the invention and the government received a non-exclusive license. Caltech pursued other licensees but did not receive interest.

Finally, Fossum and Kemeny decided to start their own company. Caltech had never licensed an invention back to the inventors before, but they felt there was no other option in this case. The business was launched in Fossum and Kemeny's home. They had a crazy idea—what if cell phones could take pictures? There was no apparent market for such a product, but they refused to quit. Finally, the dam broke, and a revolution in photography began.

The National Science Foundation gave a [grant](#) to Stanford University in the early days of the internet, and two students came up with a new search engine, which the university patented. However, there already were search engines available, so no company was interested. Finally, the students asked if they could start their own company, and Stanford agreed. That launched Google.

Similar stories emerged from underlying research behind Nobel Prize-winning technologies in [mRNA and immunotherapy](#). These stories illustrate another point: breakthroughs are often hard to spot when they occur. That's why having the inventors and their institutions owning and managing them is so important. Often, they see possibilities that others miss.

Let's close by discussing some other factors needed for success:

- You must have good research with commercial applications.
- There must be strong patent laws protecting entrepreneurs developing these inventions.
- Contracts must be honored and enforced.
- The incentives for success must be aligned.

Regarding the last point, here are a couple of things two pivotal figures in Bayh-Dole's success have told me that I've always remembered.

Niels Reimer—who licensed the Boyer-Cohen invention and created the Stanford licensing model, which most of our universities still follow—said that he always structured his deals so the industry partner got at least 51% of the benefits. He wanted them to know they had been treated fairly so they would want to work with him again.

Later, his model was taken to MIT by John Preston. Before Bayh-Dole, MIT licensed few inventions. I invited John to brief some of the officials at the Department of Commerce, which oversees Bayh-Dole. He said the most important factor of success was passion. The inventor, the research institution, and the developer must all share a burning passion for commercializing the technology, as it's likely to be a long, difficult road. Otherwise, it's doomed to fail.

He then listed the killers of passion: Greed, lawyers and committees, and government red tape.

And here's my closing advice. The reason our law worked is because we had people with hands-on experience in licensing and commercialization like Norman Latker, Howard Bremer, and Niels Reimers involved in shaping the law—but just as importantly, in identifying and teaching best practices. They helped create the Association of University Technology Managers, AUTM, which has become a world-wide resource. I attend the AUTM annual meeting every year and am always happy to see several attendees from South Africa as well as many others from around the world.

This is one profession where the best in the field are happy to share what they've learned from hard knocks. That's a resource you should take full advantage of, knowing they are happy to help you, as is the Bayh-Dole Coalition.

Finally, we welcome international members to our Coalition, and I hope you will consider joining our ranks. Having academic research from every country commercialized not only benefits the host country but all of humanity. And that's a goal all of us should support.

Thank you.

Joseph P. Allen
Executive Director
Bayh-Dole Coalition