THE PINEAPPLE EXPRESS: A DEEP DIVE INTO THE BAYH-DOLE ACT

Mark Lucas, CRA
SRAI Distinguished Faculty
Chief Administrative Officer
Departments of Neurobiology & Computational Medicine
David Geffen School of Medicine at UCLA

Sean Scott, CRA, CFRA, CPRA
SRAI Distinguished Faculty
Contract Manager, UARC
Office of Research Administration
University of Maryland, College Park

Society of Research Administrators International
Atlanta, GA, May 6, 2026

Outcomes:

- Historical review of the Bayh-Dole Act and how this relates to University research
- Implications on patent protection, licensing, and commercialization

What is the Bayh-Dole Act?

The 1980 Bayh-Dole Act, officially known as the Patent and Trademark Act Amendments, allows universities and non-profits to retain ownership of inventions created through federally-funded research, rather than assigning them to the government.

This legislation enables universities to patent, license, and commercialize technologies, accelerating their transition from lab to marketplace Under Bayh-Dole, federal contractors or grantees may elect to retain the patent rights to an invention made with federal support. The federal contractor may then use the invention itself or license the patent(s) to industry partner.

What is the Bayh-Dole Act?

Before this law, inventions developed with federal government funding were usually owned by the government.

The Bayh–Dole Act allowed universities, small businesses, and non-profits to own patents on inventions developed with federal funding.

These institutions could license their inventions to private companies, researchers, and institutions to profit from commercialization.

Before the Bayh-Dole Act

Before the Bayh–Dole Act, the U.S. had a very different (and much less effective) system for handling inventions from federally-funded research

If research was funded by a federal agency (NIH, NSF, DoD, etc.), the government usually owned the patent. Universities and researchers did NOT control their own inventions. As a result, discoveries often shelved in government hands instead of being developed.

Before the Bayh-Dole Act

Before Bayh-Dole, there were fragmented, agency-by-agency policies. Each federal agency had its own patent policy. Some allowed contractor ownership; most didn't. Companies faced a confusing, inconsistent system. As a result, businesses were reluctant to engage or invest in technology.

There were also very low commercialization rates. By 1980, the U.S. government owned ~28,000 patents but fewer than 5% were licensed or used. Most inventions were essentially "shelved."

Before the Bayh-Dole Act

There were weak incentives for universities & scientists. Universities had little reason to patent discoveries or identify industry partners. Researchers rarely benefited financially . As a result, there was no infrastructure like today's tech transfer offices.

Private companies avoided development. Turning early-stage research into products is expensive (especially drugs). Without exclusive patent rights, companies couldn't protect their investment. Why invest millions if competitors can copy it?

Before the Bayh-Dole Act

What did this look like in practice?

Imagine:
A federally-funded lab discovers a promising cancer compound. The government holds the patent. No company wants to invest in trials without exclusivity. Therefore, the discovery never becomes a drug.

Before the Bayh-Dole Act

Before Bayh–Dole, the system was bureaucratic and stagnant. There were many breakthrough discoveries, but very few real-world applications

Due to the Act, the U.S. built a **pipeline from research → patents → products**

Before	After
Government owns patents	Universities/small businesses own patents
Low licensing rates	Active licensing & start-ups
Little industry interest	Strong private-sector involvement
Discoveries sit unused	Products reach the market

Who were these guys?

Birch Bayh

Democrat from Indiana. Served in the Senate from 1963 to 1981. Known for work on constitutional amendments (like lowering the voting age to 18.. Strong advocate for making federally-funded research more useful to the public

Bob Dole

Republican from Kansas. Served in the Senate from 1969 to 1996. Later became the Republican presidential nominee in 1996. Focused on economic growth and innovation policy. Often referred to himself in the third person.

Effect of Bayh-Dole Act

The bill was bipartisan (Democrat & Republican). Both were concerned that government-funded inventions were going unused. Wanted to connect research with industry and boost the economy (remember, this was 1980).

The Bayh–Dole Act is often considered one of the most successful pieces of innovation policy because it:

- Transformed universities into innovation hubs
- Helped launch the modern biotech industry
- Became a model adopted by other countries

Breaking it Down

The law was designed to: encourage innovation and commercialization of research, turn government-funded discoveries into real-world products, and promote collaboration between academia and industry

Key provisions:

- Institutions must actively try to commercialize inventions
- The government retains “march-in rights” (it can intervene if the invention isn’t made available to the public on reasonable terms – more on this later)
- Preference for U.S. manufacturing in licensed products

Breaking it Down

Real-world impact!

The Bayh–Dole Act helped accelerate commercial development of pharmaceuticals (e.g., new drugs and vaccines)

Accelerated biotechnology start-ups

Instituted university tech transfer offices (which did not previously exist but became widespread after the law)

Real-life Impact

Emtriva (HIV/AIDS treatment) (Emory)

Gardasil (Protects against human papillomavirus (HPV), preventing cervical cancer) (Univ of Queensland)

CRISPR gene editing (University of CA)

Google Search (Stanford)

Lithium-ion battery

Breaking it Down

Research with federal funding
A university, non-profit, or small business gets a grant (e.g., from NIH, NSF).
Scientists make a discovery (drug target, algorithm, material, etc.)

Disclosure of invention
The researcher must report the invention to their institution.
Universities have Technology Transfer Offices specifically for this

Patent decision
The institution decides whether to patent the invention. If yes → they own the patent (this is the key Bayh–Dole shift). The government retains certain rights (like march-in … to be discussed in a bit)

Breaking it Down

Licensing the technology
The Technology Transfer Office finds companies to commercialize it. Exclusive license → one company (common for drugs) -or- non-exclusive license → multiple companies (common for tools/software)

Commercial development
A company invests in turning the invention into a product. Ex: clinical trials (for drugs) , engineering + scaling (for tech) . Regulatory approval sought. This step is often the most expensive and risky.

Revenue sharing
If successful: Company earns profits, university earns royalties, inventors (researchers) may receive a cut of royalties

March-in Rights

What are march-in rights?

They allow a federal agency (like the NIH or Department of Energy) to step in and grant additional licenses to other companies—even without the patent holder's permission.

If an invention isn't being used properly, the government can **"march in" and open it up to others**.

March-in Rights

When can the government use them?

The law sets specific conditions. March-in rights can be exercised if:

- **The invention isn't being made available to the public**
  Example: A drug is patented but not produced or sold
- **Public health or safety needs aren't being met**
  Example: A life-saving treatment is unavailable during a crisis
- **Requirements for public use aren't satisfied**
  Especially in federally required applications
- **U.S. manufacturing requirements are violated**
  Products based on the invention aren't substantially made in the U.S.

March-in Rights

March-in rights are important because they:

- Act as a safety valve in the patent system
- Balance private profit vs. public interest
- Remain a powerful but largely unused tool

Bottom line

They exist as a government override mechanism, but in practice, they've been more symbolic than enforced—though debates about using them continue (especially in healthcare).

Impact of Bayh-Dole Act on Universities

- Surge in Patenting & Licensing
- Rise of Technology Transfer Offices (TTOs)
- Startup Formation
- Revenue Generation
- Increased Collaboration with Industry
- Good for U.S. economy

Moral of the Story

Senators Birch Bayh and Bob Dole benefited primarily through the lasting legacy of their 1980 legislation, which is widely considered one of the most successful U.S. innovation policies. By enabling universities and small businesses to own, patent, and commercialize federally-funded research, the Act created over 19,000 startups, supported millions of jobs, and drove $1.9 trillion in economic growth.

Moral of the Story

The Bayh–Dole Act didn’t directly “create” inventions, but it enabled universities and labs to commercialize federally-funded discoveries, leading to many high-impact products.

One Last Thing

Contrary to popular opinion, the Bayh-Dole Act has no direct impact on pineapples.

No pineapples were harmed in the development of this proposal.

THE PINEAPPLE EXPRESS: A DEEP DIVE INTO THE BAYH-DOLE ACT

Mark Lucas, CRA
SRAI Distinguished Faculty
Chief Administrative Officer
Departments of Neurobiology & Computational Medicine
David Geffen School of Medicine at UCLA
mlucas@mednet.ucla.edu

Sean Scott, CRA, CFRA, CPRA
SRAI Distinguished Faculty
Contract Manager, UARC
Office of Research Administration
University of Maryland, College Park
sscott10@umd.edu

Society of Research Administrators International
Atlanta, GA, May 6, 2026