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Opinion: Preserve innovation at Michigan's research universities

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In 2020, the University of Michigan reported a record 268 licensing agreements and launched 31 startup businesses. Thanks to rights granted by the 1980 Bayh-Dole Act, UM labs alone have generated more than 400 new inventions each of the last five years, and we are launching more than 20 startups per year that contribute to the economic growth of our region.

Michigan is not alone. The "virtuous cycle" of accelerated technology transfer — the process by which university research funded by the federal government can be licensed, refined and marketed by private businesses — has been the driver for a whole string of uniquely American tech successes, from quantum computing to cutting-edge medical treatments.

Accelerated transfer works so well that it's easy to forget how new — and how delicate — the policy balance is, or how the system was once so difficult to navigate.

Back in the late 1970s, America's innovation pipeline was clogged. Then as now, university researchers were developing basic scientific knowledge through their research. And the business community was eager to engineer that knowledge into new consumer products. But because the patents on federally funded science were held by the federal government itself, licensing the research became a bureaucratic obstacle course.

Both university researchers and the business community wanted reform, and the struggling economy of that time certainly needed it. U.S. Sens. Birch Bayh, D-Indiana, and Bob Dole, R-Kansas, partnered on a new system. Under their proposal, research institutions that conducted federally funded research would be allowed to patent their work and license their intellectual property directly to the private sector.

The Bayh-Dole Act ushered in a new era of scientific discovery and economic innovation, unlike anything the world had seen before. The new policy put everyone — scientists, engineers, universities, governments, consumers, investors, businesses — on the same team.

The results speak for themselves. According to one study, the total economic output generated by the Bayh-Dole research cycle between 1996 and 2017 was $1.7 trillion, resulting in more than 14,000 new businesses and 5.9 million jobs.

I've personally seen the impact of Bayh-Dole.

I work in the office of technology transfer at the University of Michigan. Bayh-Dole is what enables us to turn UM scientists' patented inventions into royalty income for our labs, which in turn funds new research and starts this amazing "virtuous cycle" over again. The companies that license our patents then create jobs and economic development in our region.

Evoq Therapeutics is refining UM research to develop immunotherapies right here in Ann Arbor. The nasal-inhalant flu vaccine FluMist was developed over the course of decades by UM epidemiologist John Maassab.

HistoSonics, which last year raised $40 million in financing, is turning ultrasound technology invented at UM into non-invasive alternatives to surgery.

Also last year, MORPHEUS — a computer chip declared "unhackable" by the UM engineers who developed it — survived a three-month crowd-sourced bounty program unscathed. More than 500 of the world's best cybersecurity experts couldn't beat it.

Further back in the innovation pipeline, UM scientists are working to advance autonomous vehicles, transportation safety, new treatments for cancer and other technologies.

The Bayh-Dole Act allows universities to own the results of federally funded innovations. It also helps them create the technology transfer infrastructure to support the development of these technologies, and the efficient transfer of these research discoveries to the private sector through licensing and startup company formation.

Bayh-Dole unleashed the benefits of America's innovation ecosystem and has been hailed as "the most inspired piece of legislation to be enacted in America over the past half-century." Notwithstanding this success, some lawmakers want to use the law's "march in" authority — which allows the government to relicense innovations in limited circumstances — as a backdoor mechanism to regulate drug prices.

Bayh and Dole clearly stated that the "march in" provision was written to encourage patent holders to license their work for development and was never intended to be a price control mechanism. Distorting that original intent would inhibit university-industry transfer and the very research pipeline that produces life-saving health care treatments.

America's innovative economic edge has long been bolstered by a strong policy framework that encourages public-private partnerships. This is why I'm heartened to see bipartisan support for much-needed investments in scientific research as part of the U.S. Innovation and Competition Act.

These investments could yield new breakthroughs that transform our industries and spur widespread economic opportunity. For that potential to be realized, though, we must ensure that any discoveries or technologies generated by this activity are transferred from the laboratory to the private sector for commercialization.

The Bayh-Dole Act is the linchpin for this delicate balance. So long as we preserve its merits, we stand poised for a generational transformation of our innovation infrastructure.

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