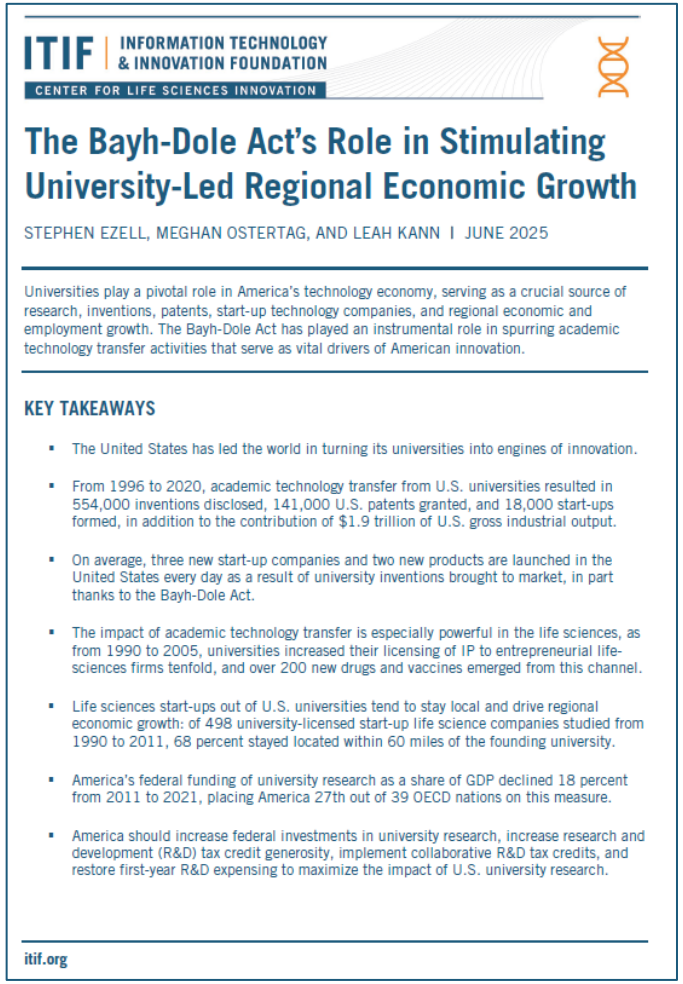
The Bayh-Dole Act's Role in Stimulating University-Led Regional Economic Growth

Stephen Ezell
VP, Global Innovation Policy, ITIF

July 22, 2025

The Bayh-Dole Act Enables University-Led Economic Growth

- America has excelled at transforming its universities into engines of regional/national economic & employment growth.
- Academic technology transfer led to 500 life-sciences start-ups from 1990 to 2011, 68 percent of which stayed local.
- Report examines how Bayh-Dole led to university-driven eco. growth in: Colorado, Delaware, Georgia, Indiana, Kansas, NC.
- The United States must sustain robust levels of federal R&D funding for science that underpins this innovation engine.



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The Bayh-Dole Act's Role in Stimulating University-Led Regional Economic Growth

STEPHEN EZELL, MEGHAN OSTERTAG, AND LEAH KANN | JUNE 2025

Universities play a pivotal role in America's technology economy, serving as a crucial source of research, inventions, patents, start-up technology companies, and regional economic and employment growth. The Bayh-Dole Act has played an instrumental role in spurring academic technology transfer activities that serve as vital drivers of American innovation.

KEY TAKEAWAYS

- The United States has led the world in turning its universities into engines of innovation.
- From 1996 to 2020, academic technology transfer from U.S. universities resulted in 554,000 inventions disclosed, 141,000 U.S. patents granted, and 18,000 start-ups formed, in addition to the contribution of $1.9 trillion of U.S. gross industrial output.
- On average, three new start-up companies and two new products are launched in the United States every day as a result of university inventions brought to market, in part thanks to the Bayh-Dole Act.
- The impact of academic technology transfer is especially powerful in the life sciences, as from 1990 to 2005, universities increased their licensing of IP to entrepreneurial life-sciences firms tenfold, and over 200 new drugs and vaccines emerged from this channel.
- Life sciences start-ups out of U.S. universities tend to stay local and drive regional economic growth: of 498 university-licensed start-up life science companies studied from 1990 to 2011, 68 percent stayed located within 60 miles of the founding university.
- America's federal funding of university research as a share of GDP declined 18 percent from 2011 to 2021, placing America 27th out of 39 OECD nations on this measure.
- America should increase federal investments in university research, increase research and development (R&D) tax credit generosity, implement collaborative R&D tax credits, and restore first-year R&D expensing to maximize the impact of U.S. university research.

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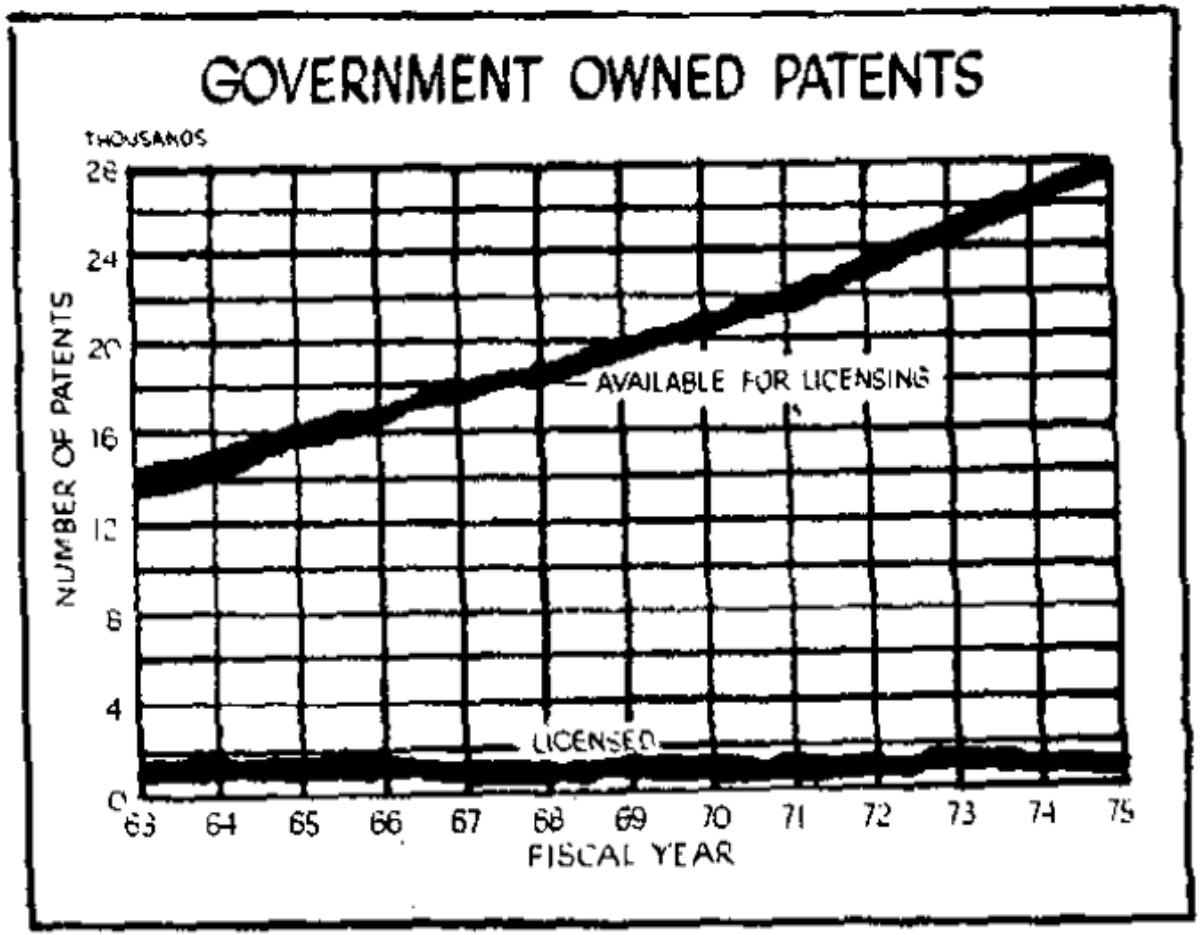
The Pre-Bayh Dole Era



Source: Courtesy Joe Allen

- U.S. competitive malaise.
- Less than 5% of government inventions licensed non-exclusively.
- "Not one single new drug developed when patents taken from universities."



Elmer Staats, Comptroller General

The Bayh-Dole Act (35 U.S.C. 200)

- 1980 bipartisan legislation passed giving universities, non-profits, and small businesses rights to IP generated from federally funded research.
- The inventor retains ownership and title to subject inventions, which can be exclusively or non-exclusively licensed to third parties.
- Gives preference in licensing to small companies/domestic manufacturers.
- Technology management decentralized from government to the institutions and entrepreneurs making the inventions.
- Induce a virtuous cycle of innovation: royalties used to reward inventors, fund more R&D, cover technology transfer costs.

The Impact of U.S. Academic Technology Transfer Activity

554,000+
inventions disclosed...

141,000+
U.S. patents issued...

18,000+
startups formed

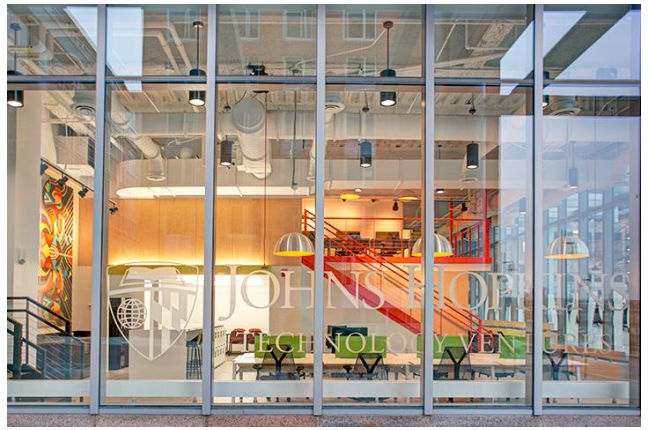
to research institutions since 1996

From 1996 to 2020, up to...

$1.9 trillion
contributed to **U.S. gross industrial output**

$1 trillion
contributed to **U.S. gross domestic product**

6.5 million
jobs supported



The Bayh-Dole Act: Impact

- *The Economist: "Possibly the most inspired piece of legislation to be enacted in America over the past half-century."*
- *"Unlocked all the inventions and discoveries that had been made in laboratories throughout the U.S. with the help of taxpayers' money."*
- ***"More than anything, this single policy measure helped to reverse America's precipitous slide into industrial irrelevance."***

The Economist

OPINION

Innovation's golden goose

The reforms that unleashed American innovation in the 1980s, and were emulated widely around the world, are under attack at home

Source: *The Economist*, "Innovation's Golden Goose," December 14, 2002

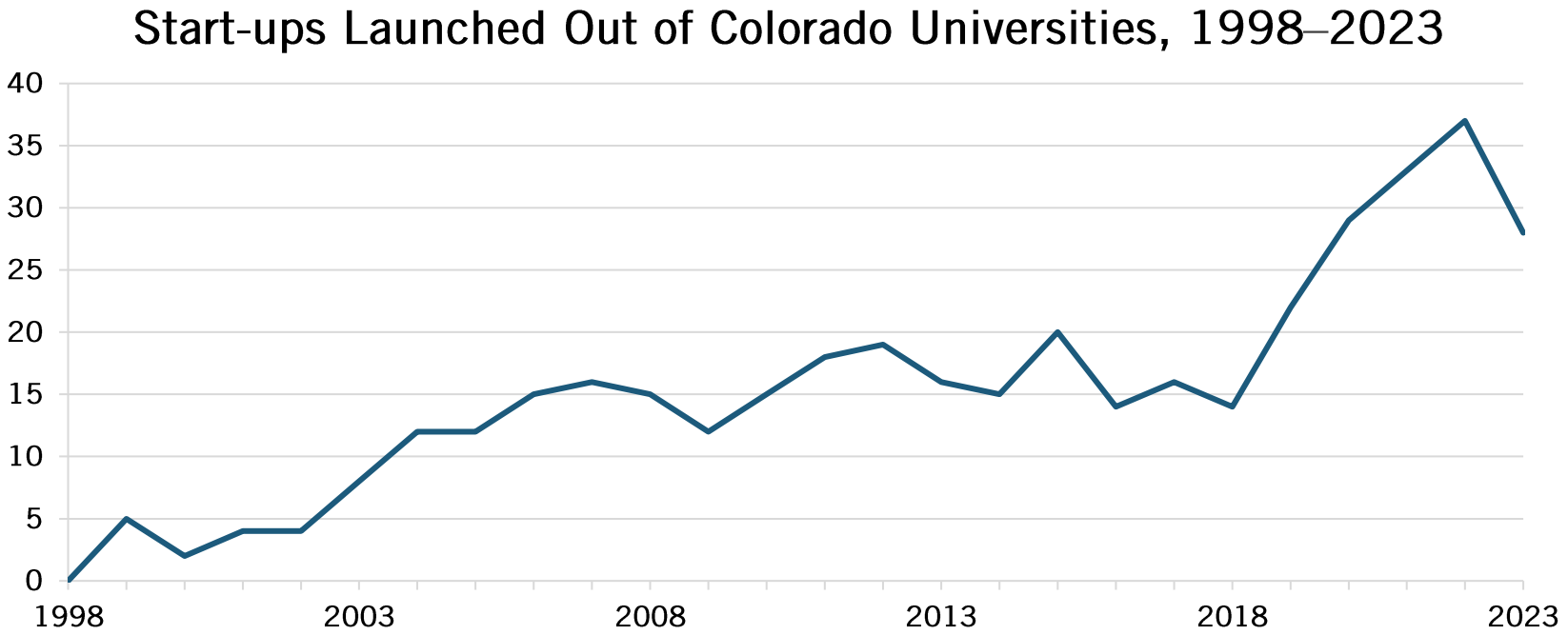
State Profiles

- Overview of State's Technology Economy (Life-sciences & IT)
- Overview of How States' Universities Drive Innovation (1998 to 2023)
  - Attraction of Federal and Industry R&D Investment
  - Number Invention Disclosures and IP Licenses
  - Number USPTO Patent Grants
  - Number Start-ups Launched
- 2-3 "Innovation Vignettes" of University Startups



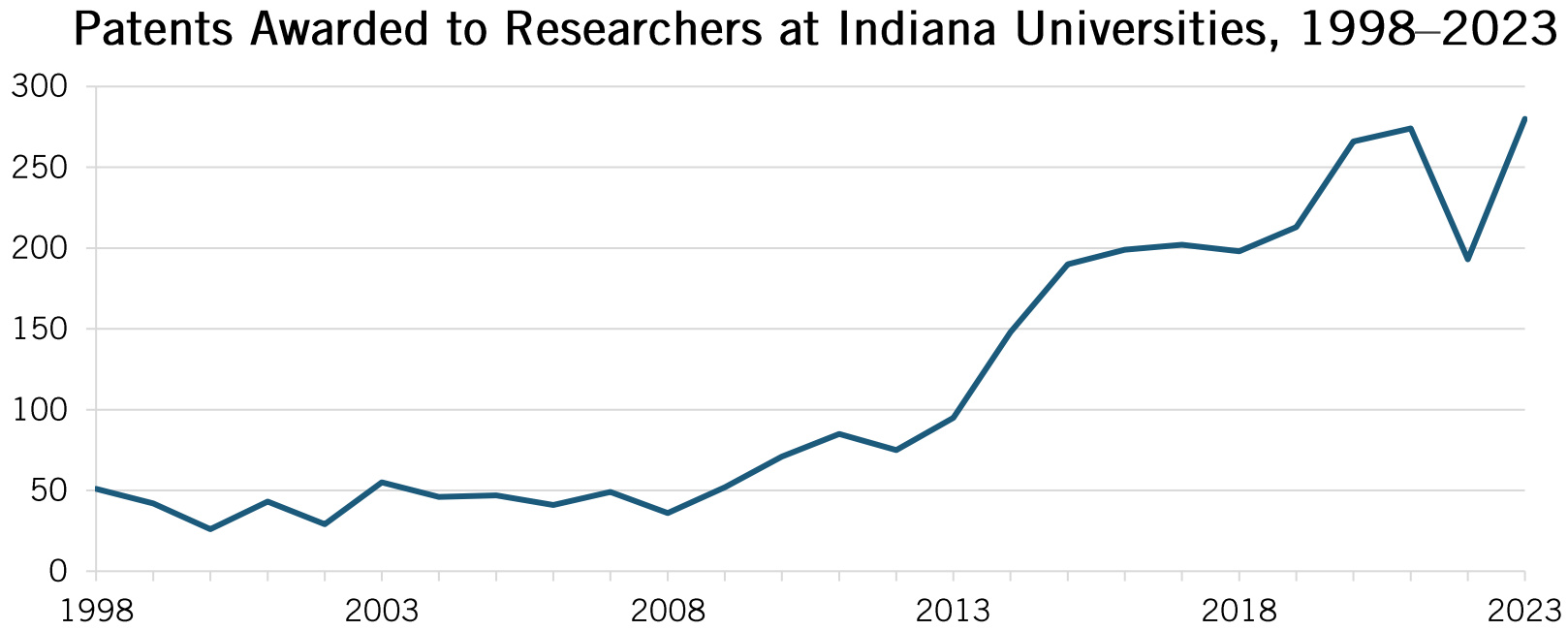
Colorado

- Colorado U. system contributes $20 billion to state economy annually.
- From 1998 to 2023, Colorado universities have spawned 1,626 patents and led to the creation of 401 startup-companies, one-third of them since 2018.



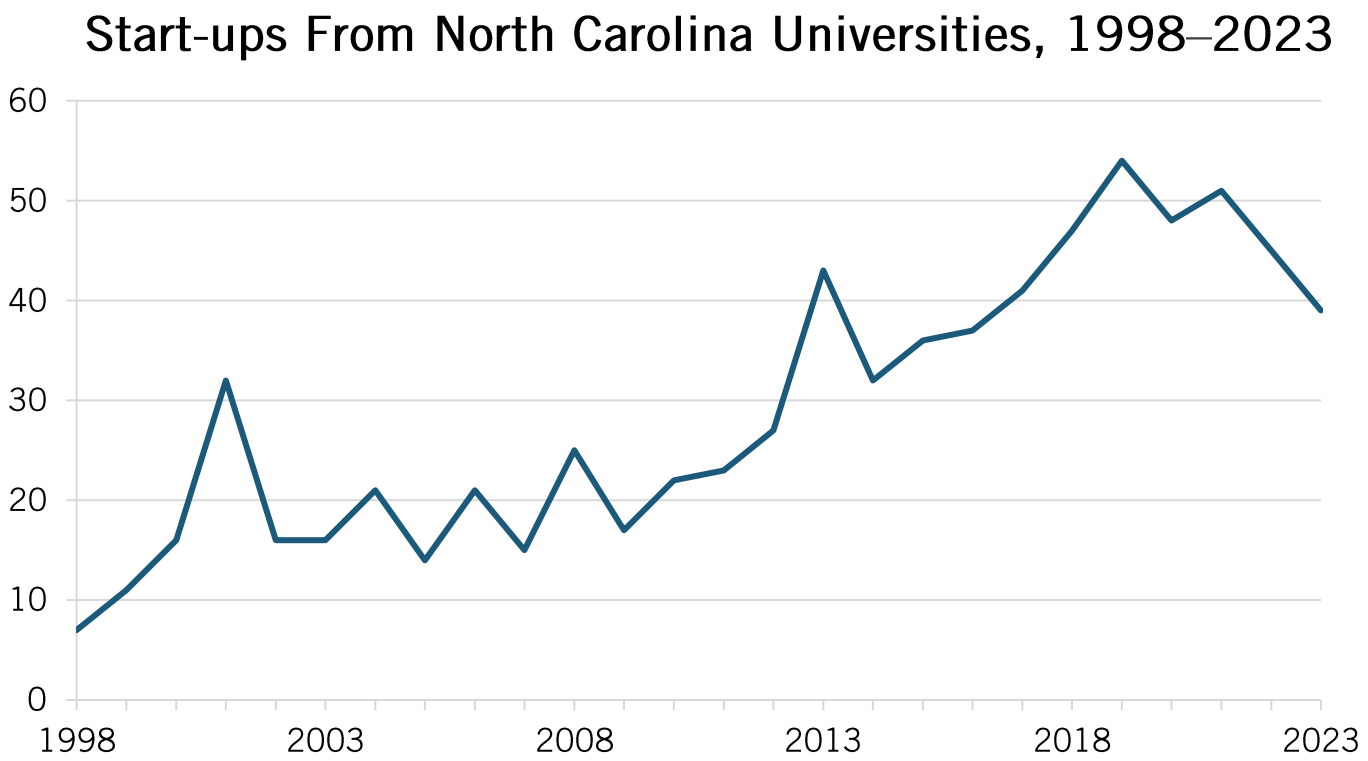
Indiana

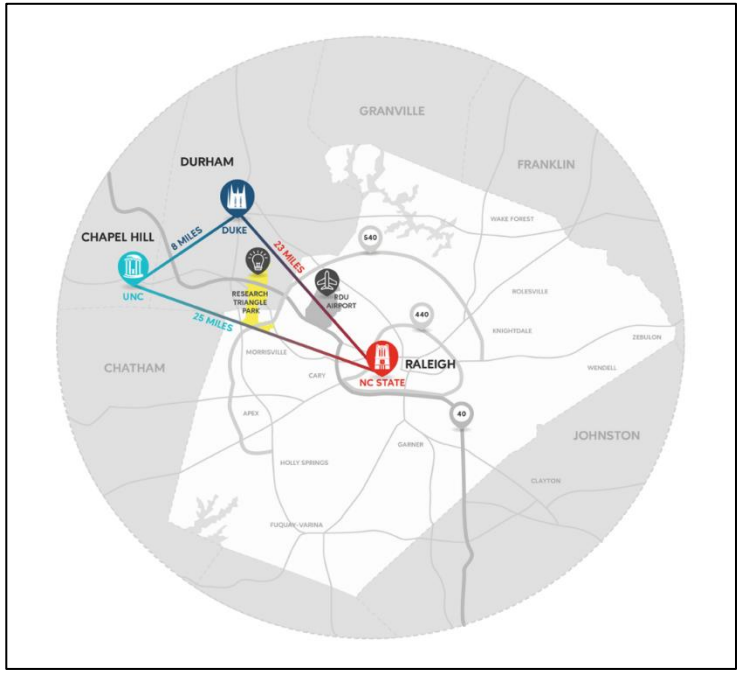
- Indiana's life-sciences sector contributes $95 billion to GSP annually.
- Nearly 500 start-ups have been launched by Indiana universities since 1998.
- Annual patents received by Indiana universities have increased six-fold.



North Carolina

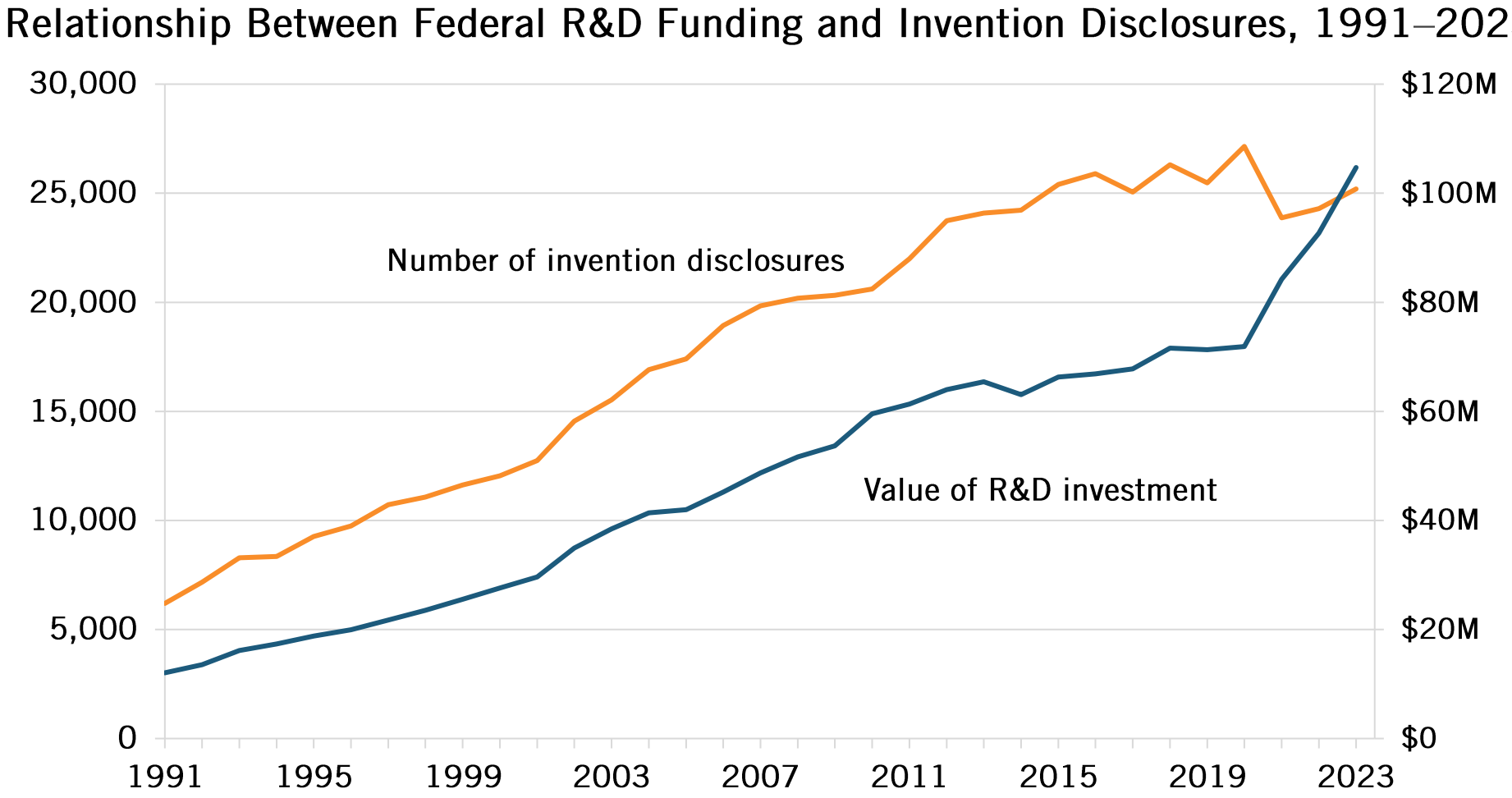
- Since 1958, UNC alone has spawned 786 start-ups, 443 still in NC.
- North Carolina universities have attracted $33 billion federal R&D funding.





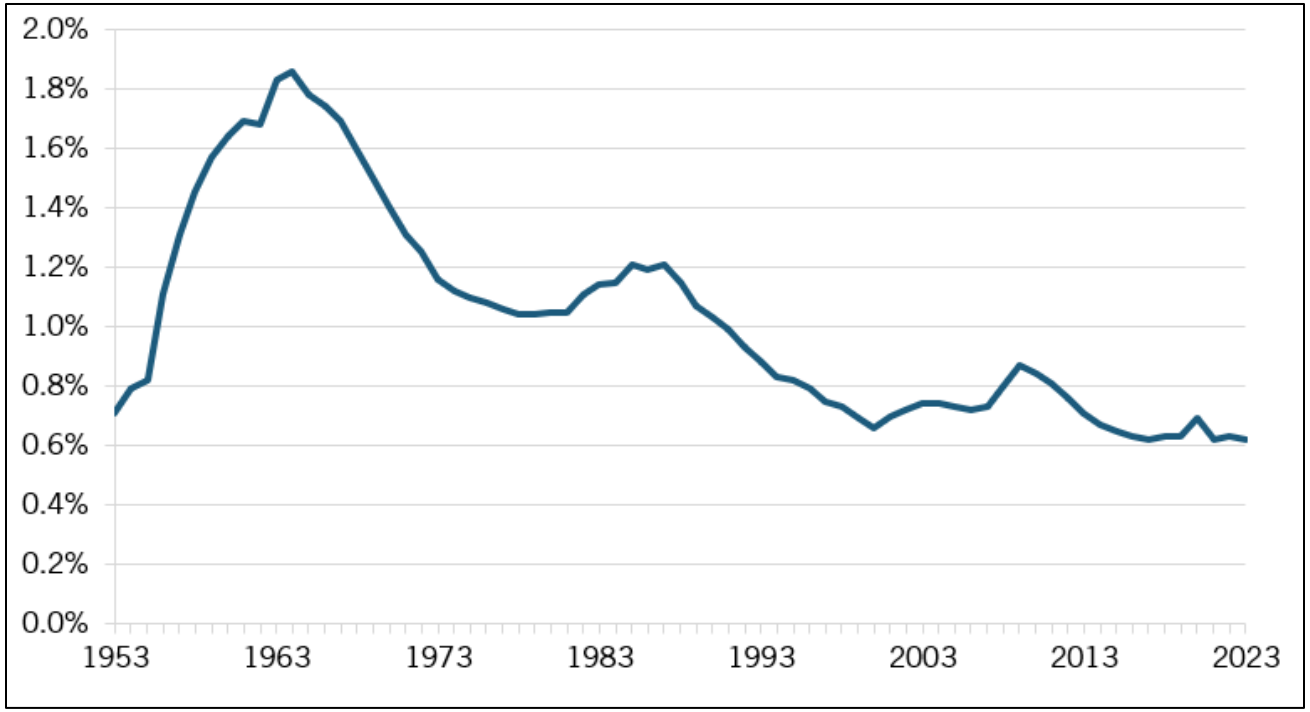
NC Research Triangle, connecting UNC, Duke, and NC State.

Link Between Federal R&D Funding and U.S. Invention

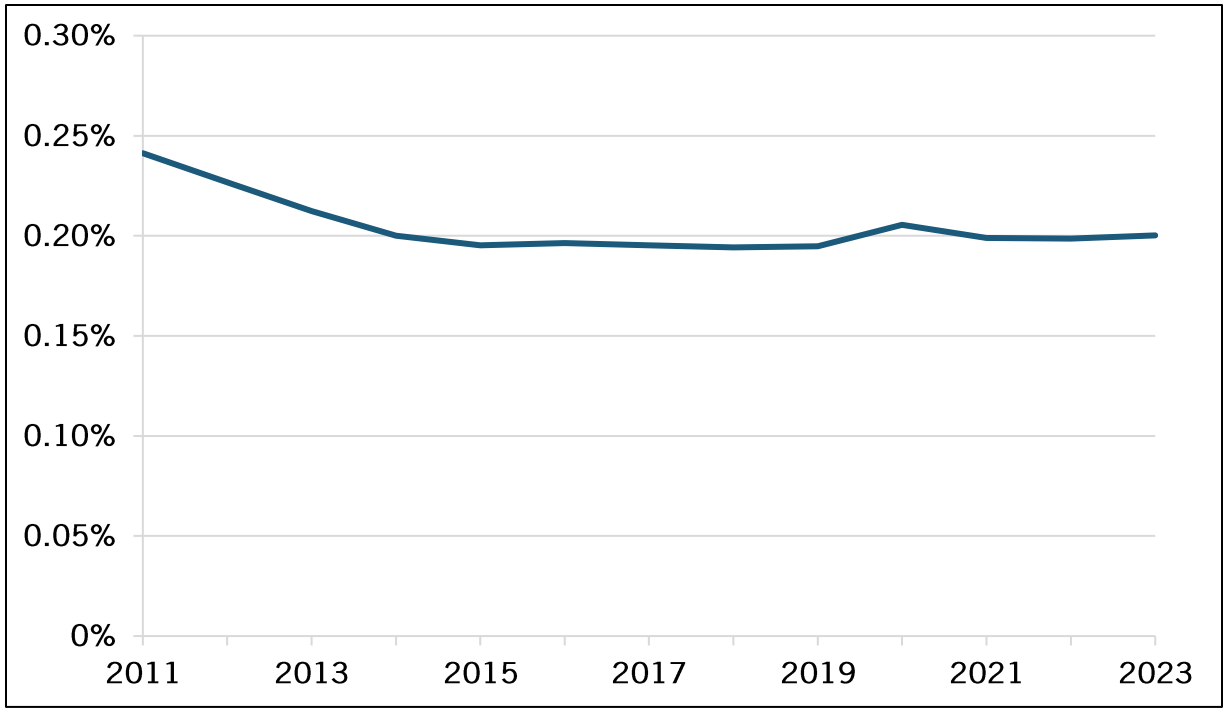


Federal Investment in R&D Faltering

Federal R&D Funding as a Share U.S. GDP, 1953–2023

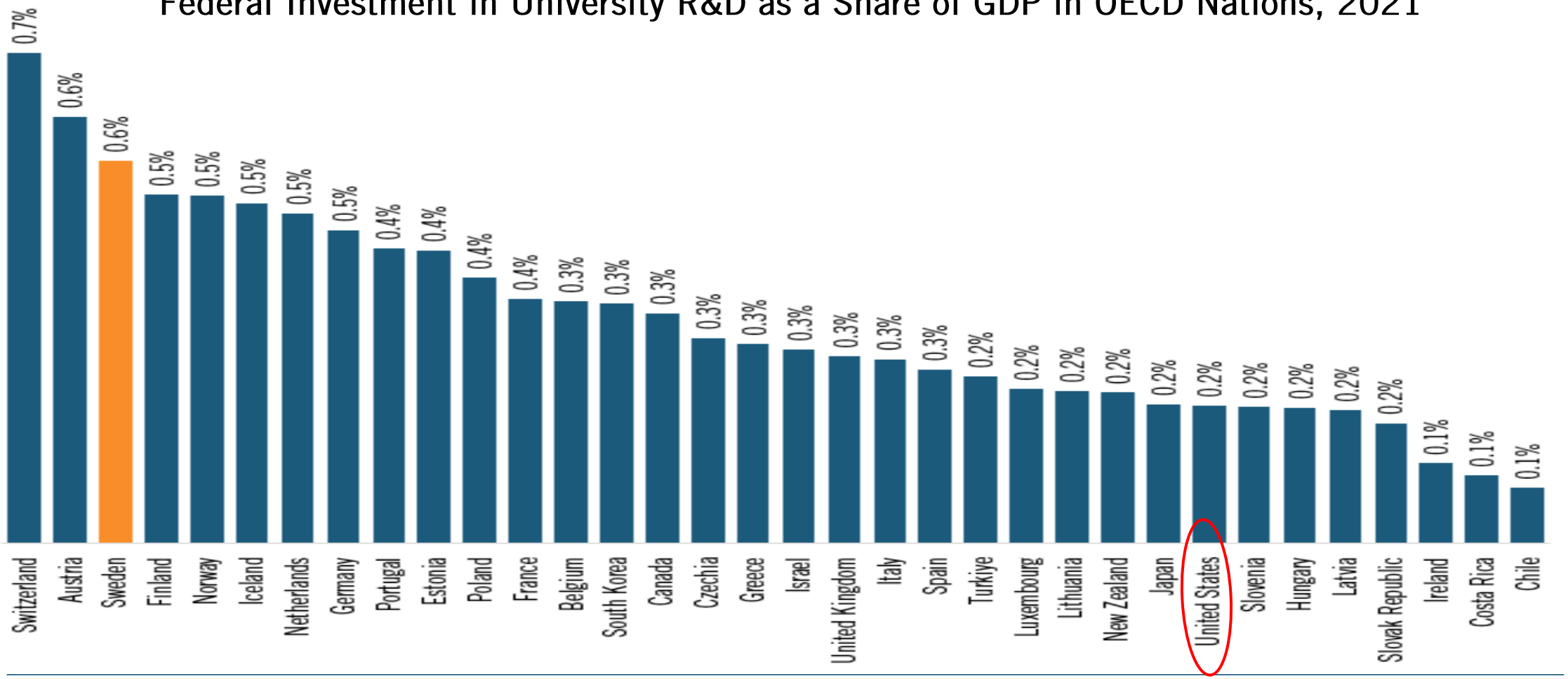


Federal Investment in University Research as a Share U.S. GDP, 2011–2023



United States Just 27th in OECD in University R&D Funding

Federal Investment in University R&D as a Share of GDP in OECD Nations, 2021



Federal Policy Recommendations

- ✓ Increase federal funding for university research; reverse recent cuts to NSF, NIH, DOE, etc.
- ✓ Make up for indirect cost cuts with increased NIH funding.
- ✓ Protect Bayh-Dole; refrain from introducing march-in rights provisions.
- ✓ Reauthorize the Small Business Innovation Research Program.
- ✓ Introduce collaborative R&D tax credits and restore first-year expensing.
- ✓ Make innovation and entrepreneurship a stronger consideration for university tenure.

State Policy Recommendations

- ✓ Provide matching SBIR funding.
- ✓ Introduce collaborative R&D tax credits.
- ✓ Introduce innovation vouchers.
- ✓ Leverage “fund of funds” approaches.

Thank You!

Stephen Ezell | sezell@itif.org | 202.465.2984

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@ITIFdc

@sjezell