2025 SPARKING AMERICAN ECONOMIC GROWTH

THE SCIENCE COALITION

APRIL 2025

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A MESSAGE FROM THE OFFICE OF SCIENCE COALITION PRESIDENT ABIGAIL ROBBINS

The Science Coalition (TSC) is proud to celebrate our 30th year – and the 5th anniversary of our "Sparking Economic Growth" report.

TSC is comprised of more than 50 of the nation's leading public and private research universities. We're dedicated to sustaining the federal government's investment in fundamental scientific research to stimulate the economy, spur boundless innovation, and drive American competitiveness for generations to come.

Over the last 30 years, TSC has fortified our presence in Washington, where we're known for our Champions of Science Award – which is given yearly to Members of Congress whose actions and votes consistently reflect their support for fundamental scientific research – and our "Science of" event series, which focuses on how science permeates all industries, sectors, and aspects of our lives, businesses, and communities. We're also known around college campuses for our "Fund it Forward" Student Video Challenge that recognizes up and coming researchers. But most importantly, we're known for our tireless advocacy – demonstrating the tremendous and enduring impact of scientific research on the American economy and on our broader society.

American higher education research institutions are second to none – envied across the world for conducting cutting-edge research and creating educational opportunities. They deliver critical scientific breakthroughs and discoveries that set the course for established industries, incubate competitive startups, found new companies, create well-paying jobs, and drive economic growth in communities across the country.

Science is at the core of American life and the American economy. That's why we're proud to share this year's "Sparking Economic Growth" report, which provides a look back – and a look forward – at the significant economic impact of fundamental, federally funded scientific research conducted at American colleges and universities.

Sincerely,

Abigail Robbins
Assistant Director, Federal Affairs
Northeastern University

NEW MEMBERS!

The Science Coalition proudly welcomed several new members since our last Sparking Economic Growth report in 2021 – expanding our ranks to 55 research institutions.

AMERICAN UNIVERSITY

American University (AU) is committed to advancing impactful research across disciplines. AU focuses on scholarship, learning, and community engagement. The university has launched initiatives to mobilize cross-disciplinary research efforts that address complex societal challenges. AU emphasizes undergraduate research opportunities and provides funding for student projects and conference travel.

BINGHAMTON UNIVERSITY

Binghamton University is recognized as the top-ranked public university in New York, with a strong focus on academics and vibrant research programs. The university prides itself on offering students a broad, interdisciplinary education with an international perspective. Binghamton's commitment to research excellence is evident, with its professors ranking among the top 2% globally in their respective fields.

GEORGETOWN UNIVERSITY

Georgetown University is a Catholic and Jesuit, student-centered, research university. The university is grounded in Catholic and Jesuit values that drives its mission to educate women and men to be reflective lifelong learners, encouraging responsible and active participants in civic life, and to live generously in service to others. The university's location in the nation's capital, provides unique opportunities for research and engagement with public policy and diplomacy, NGOs, and public service.

OLD DOMINION UNIVERSITY

Old Dominion University (ODU) is a forward-focused public doctoral research institution. ODU collaborates with strategic partners to address challenges and propose solutions that impact coastal resilience, health innovations, maritime systems, and national security. In 2022, ODU achieved R1 Research Institution status from Carnegie, highlighting its commitment to high-level research across its academic colleges and schools.

SYRACUSE UNIVERSITY

Syracuse University is a top-tier research institution recognized for its interdisciplinary approach and innovative solutions to global challenges. With expertise spanning fields like data science, environmental sustainability, and national security, its research capabilities drive impactful discoveries and foster collaboration across academia, government, and industry.

UNIVERSITY OF ALASKA

The University of Alaska system inspires learning, and advancing and disseminating knowledge through teaching, research, and public service, emphasizing the North and its peoples. For the past 100 years, the University of Alaska system has built a tremendous foundation in Arctic research, education, and leadership. As the nation's premier Arctic university — with expertise and programs in multidisciplinary Arctic scholarship, research, global policy, and Indigenous and local knowledge — they are focused on finding solutions to the challenges in the Arctic.

UNIVERSITY AT ALBANY

The University at Albany (UAlbany) positions itself as a premier public research university with strengths in atmospheric sciences, public health, and cybersecurity. Known for its collaborations with government and industry, UAlbany drives innovation and discovery in addressing societal challenges while preparing students for impactful careers.

UNIVERSITY OF CINCINNATI

The University of Cincinnati (UC) is renowned as the founder of cooperative education (Co-op). UC's research priorities are closely tied to its emphasis on experiential learning and entrepreneurship. In the 2023-24 academic year, more than 8,300 UC students completed co-op experiences, earning an estimated $88.8 million during their placements. This highlights UC's commitment to combining academic research with real-world application.

VIRGINIA COMMONWEALTH UNIVERSITY

Virginia Commonwealth University (VCU) is a leading public research institution known for its innovation and community impact. With strengths in life sciences, engineering, and the arts, VCU drives advancements in areas like healthcare, biotechnology, and public policy through interdisciplinary research and robust industry partnerships.

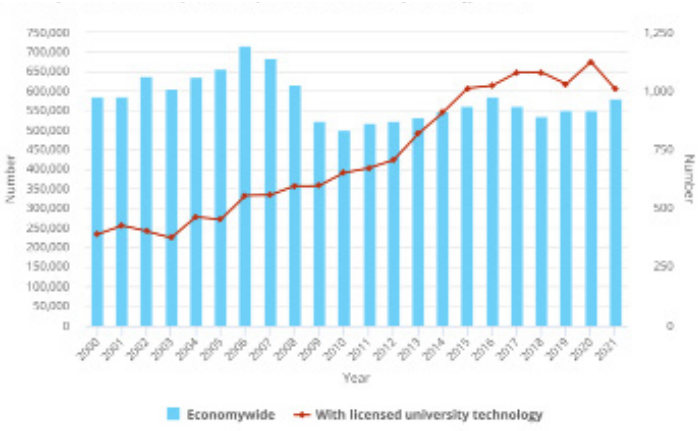
WHY IT MATTERS: FEDERAL INVESTMENTS IN SCIENCE

Return on Investment

Federally funded scientific research provides a significant return on investment for the American economy – igniting new businesses, creating thousands of jobs, shoring up local economies, and contributing scores to the national gross domestic product.

According to the National Science Foundation's National Science Board, the number of business startups powered by licensed university technology continues to grow. In fact, over the last 15 years – since the first edition of our Sparking Economic Growth report – startups fueled by licensed university technology have grown by more than 80%, increasing from 554 startups in 2006 to 1,009 startups and counting in 2021.

Annual Economywide Business Startups and Startups with Licensed University Technology: 2000-21



The National Science Foundation's National Science Board has also found that the number of university technology licenses executed by small and large companies continues to substantially increase – another key indicator of the economic impact that college and university scientific research endeavors make on the American economy.

University Technology Licenses or License Options Executed, by Company Characteristic: 2011, 2016, and 2021

(Number)

Company characteristic	2011	2016	2021
All licenses, total active	5,085	7,726	10,409
New licenses or options executed	5,862	7,165	8,769
Startups	898	1,415	1,480
Small companies	3,124	3,598	5,344
Large companies	1,840	2,192	1,945

Note(s):
AUTM collects data on invention and patent-related activities of its member universities and hospitals. Responding institutions may report for any 12 month period ending in the identified year. Startup companies reported by universities in AUTM data refer only to those companies that were formed in the reporting year specifically to develop the technology being licensed. Counts of licenses to startups and small companies are mutually exclusive. Small companies are those with fewer than 500 employees.

Source(s):
AUTM, AUTM Licensing Survey (various years), accessed April 2023.

Science and Engineering Indicators

Independent economists have consistently established that government-funded research and development (R&D) is critical for economic expansion and productivity growth.

- According to United for Medical Research, every $1 in federal research funding from the National Institutes of Health (NIH) generates nearly $2.56 of economic activity. Additionally, NIH funding supported 407,782 jobs and generated $94.58 billion in new economic activity nationwide in FY 2024.

- Andrew J. Fieldhouse and Karel Mertens at the Federal Reserve Bank of Dallas found that government investments in scientific R&D have yielded returns of 150% to 300% since the post-World War II period. Their research suggests government funding of non-defense R&D is self-financing – in the long run, the economic return on investment surpasses the initial federal outlay.

- A recent study by Arnaud Dyèvre estimates that a 1% increase in government R&D funding generates roughly 0.024% in productivity increases after five years. In other words, after considering that government R&D is only a portion of overall U.S. R&D, a 1% increase in R&D funding drives more than a 1% increase in annual growth.

- A working paper from the National Bureau of Economic Research suggests federal agencies may even be underestimating the economic payoffs from government R&D investments. The paper found that returns on federally funded R&D appear to be substantially higher than the returns on other forms of federal investment, such as physical infrastructure.

Meeting Unique Needs

Federal funding for basic scientific research serves many critical functions that private-sector research investments simply cannot match.

Basic scientific research often pays longer-term and more transformational dividends. It also drives significant economic growth and helps increase productivity. But the market-driven nature of the private sector doesn't incentivize corporate investments in basic scientific research. Even though most companies rely on basic research to fuel new innovations and discoveries, they tend to focus their scientific investments on applied research – because it benefits their short-term bottom lines.

That's where the federal government steps in. Since World War II, public sector investments in basic scientific research have formed the backbone of American innovation and ingenuity – helping our nation lead the world in scientific discovery, technological advancement, and economic growth and prosperity.

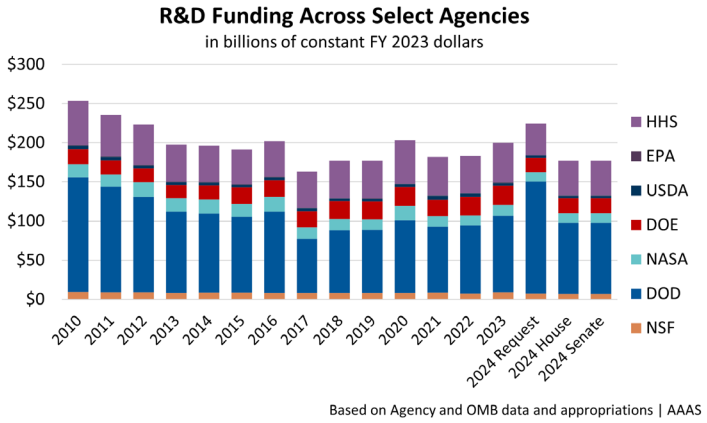
Without the federal government's robust and sustained investments in basic scientific research, America's position as a world-class leader in science and technology – and the economic benefits that come with that leadership position – will be in jeopardy.

Simply put, federal investments in basic scientific research at American colleges and universities help ensure that America remains at the forefront of technological breakthroughs, high-impact discoveries, and world-class science.

Challenges and Threats

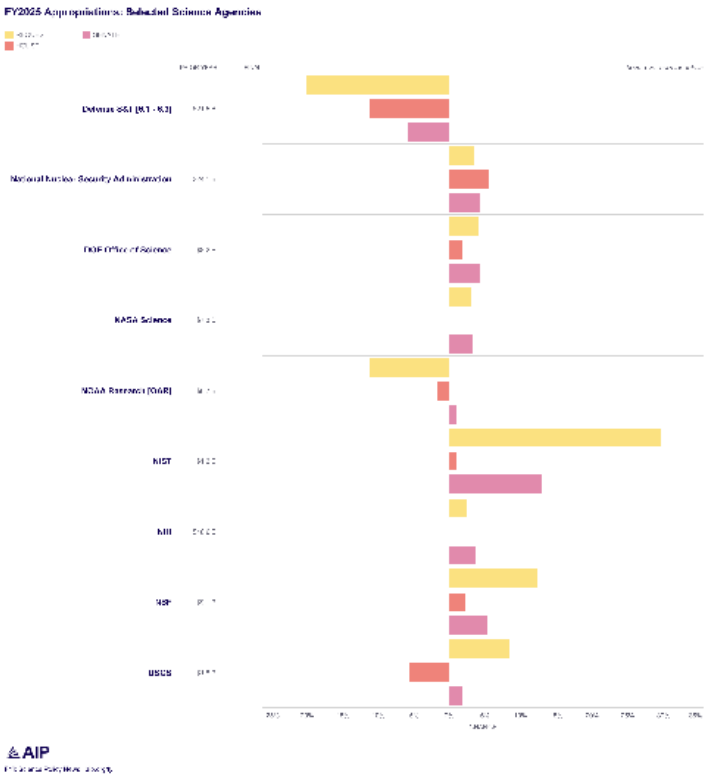
American colleges and universities face increasing pressure around the world in the race to secure new patents and make technological advancements.

In 2023, only 58 American higher education institutions featured in the National Academy of Inventors' (NAI) annual Top 100 list, which ranks universities on innovation and inventions – a decline from NAI's first Top 100 report in 2015, when 63 American universities made the list.



Based on Agency and OMB data and appropriations | AAAS

Federal investments in fundamental scientific research at American colleges and universities continue to decline amid a challenging political environment and myriad legislative uncertainties. As a recent chart assembled by the American Association for the Advancement of Science illustrates, Congressional appropriations outlays and agency funding streams continue to shrink.



WHAT THEY'RE SAYING: AMERICAN VOTERS VOICE STRONG SUPPORT FOR FEDERALLY FUNDED SCIENTIFIC RESEARCH

Maintaining the federal government's robust investments in scientific research remains a top bipartisan priority. According to the Science Coalition's Key Findings from a National Survey of Registered Voters:

- More than 90 percent of American voters believe it's important for the U.S. to lead the world in scientific research and technology.
- Nearly 8 in 10 voters approve of the federal government using taxpayer funds to invest in scientific research, with strong bipartisan support.
- Two-thirds of voters say we should invest more in scientific research.
- Voters recognize that scientific research contributes to society, and see lifesaving medicines, a competitive workforce, and national security as important outcomes of research.

AMERICAN UNIVERSITY

SPARKS ECONOMIC GROWTH

BIG PICTURE

American University (AU) plays a significant role in driving economic growth and development in the District of Columbia (D.C.) and the surrounding region, with its impact now further enhanced by the establishment of the Translating Research into Action Center (TRAC).

Launched in February 2024 and funded by a $5.7M grant from the National Science Foundation, TRAC is strengthening AU's capacity to promote research translation for societal and economic impact, aiming to make academic research a catalyst for positive, tangible growth in society.

TRAC is working on enhancing technology transfer opportunities to strengthen regional economic impact and is pioneering the measurement of societal and economic impact in collaboration with Pew Charitable Trusts. The center is also developing training programs for AU faculty, post-doctoral scholars, Ph.D. students, and undergraduates, further enhancing the university's role in developing a skilled workforce.

As part of its mission, TRAC identifies, incubates, and maintains a pipeline of research translation projects at AU, including studies on vicarious trauma in counterterrorism practitioners, empowering mentors, and modeling clinical trial outcomes using machine learning.

Through these initiatives, American University is reinforcing its role not only as an educational institution but also as a key driver of economic growth, innovation, and opportunity in D.C. and beyond. The establishment of TRAC underscores the university's commitment to enabling research informed civic engagement and strengthening the use of evidence-driven policy and practice. By bridging the gap between academic research and practical solutions, AU lives its research tagline: Societal Outcomes. Actionable Research. Eagles SOAR!

AUBURN UNIVERSITY

SPARKS ECONOMIC GROWTH

Auburn University is a catalyst for innovation and economic growth, transforming pioneering research into real-world solutions through strong industry partnerships and entrepreneurial support.

BIG PICTURE

Auburn University plays a crucial role in fostering innovation and economic development through its research capabilities and technology transfer initiatives. The New Venture Accelerator at Auburn has been instrumental for the success of startups coming from the university, providing crucial guidance on marketing, sales, and business development.

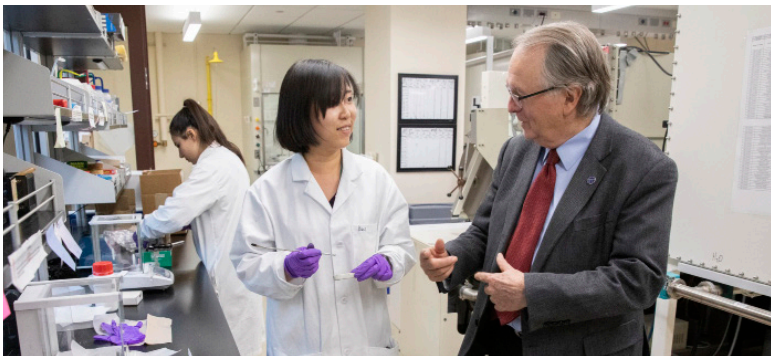
By bridging the gap between academic research and industry applications, Auburn University continues to play a vital role in advancing scientific knowledge and the development of commercially viable technologies that address pressing challenges in the space exploration and advance manufacturing industries.

BIG PICTURE

Binghamton University's research capabilities span several fields and industries – including health care, energy, materials science, and electronics packaging. Binghamton University plays a pivotal role in its region's economic development, attracting $68.5 million in research funding in 2022-2023, with 64% of these investments coming from federal sources. This funding supports local jobs and drives innovation across key industries.

The university's Office of Entrepreneurship and Innovation Partnerships reported 37 new technology disclosures in the past year, along with multiple patent applications and royalties generated from licensed technologies. It also reported 43 U.S. patent applications and secured 22 issued patents.

Binghamton University also leads the New Energy New York initiative, which was designated as a Regional Tech Hub in 2023 and the National Science Foundation (NSF) Upstate New York Energy Storage Engine. These efforts focus on strengthening the domestic battery supply chain and fostering innovation in energy storage technologies with the ultimate vision to make Upstate New York America's battery capital.



Federally and state-funded initiatives led by Binghamton University aim to establish upstate New York as a national hub for battery innovation and manufacturing. Binghamton was designated as one of 10 inaugural National Science Foundation (NSF) Regional Innovation Engines in January 2024. It received a U.S. Economic Development Administration (EDA) designation as a federal Battery Tech Hub in October 2023 and was named the winner of an EDA Build Back Better Regional Challenge award in September 2022. Binghamton is the only university in the country to receive all three designations.

BROWN UNIVERSITY

SPARKS ECONOMIC GROWTH

ABOUT THE COMPANY

TRANSPOSON THERAPEUTICS

Transposon Therapeutics is at the forefront of developing therapies for neurodegenerative diseases, such as Alzheimer's. The company's cutting-edge genetic technologies emerged from research conducted at Brown University.

PHINYX

Phinyx AI is advancing artificial intelligence through its innovative Physics-Informed Machine Learning platform. Developed from research led by Dr. George Karniadakis, a Professor of Applied Mathematics and Engineering at Brown University, the technology integrates physical principles with machine learning to solve complex computational challenges.

ECONOMIC IMPACT

Transposon Therapeutics employs 11 individuals and has raised more than $50 million in venture capital, reflecting its potential as a leader in neurodegenerative disease therapies.

Phinyx AI employs 5 individuals and makes notable advancements in the artificial intelligence field.

BIG PICTURE

Brown University fosters a dynamic ecosystem for innovation and entrepreneurship, translating ground-breaking federally funded research into impactful companies and transformative technologies. The Nelson Center for Entrepreneurship provides teaching, mentorship and programming to support student entrepreneurship. Brown Technology Innovations supports Brown faculty members in developing new startup companies and industry research collaborations. This ecosystem enables the development of startups like Transposon Therapeutics and Phinyx AI, which are addressing pressing global challenges in biotechnology, artificial intelligence, and data storage.

COLUMBIA UNIVERSITY

SPARKS ECONOMIC GROWTH

Columbia University fosters groundbreaking innovation by bridging academia and industry through scientific research initiatives. A prime example is Xscape Photonics, a university spinout redefining data transmission.

ABOUT THE COMPANY

Founded in 2022, Xscape Photonics is headquartered in Fort Lee, NJ. The company emerged from cutting-edge research conducted within Columbia University's Departments of Electrical Engineering and Applied Physics & Applied Mathematics, as well as the Columbia Nano Initiative. Initially supported by federal funding from the Department of Defense and the Department of Energy, Columbia's research played a crucial role in advancing the company's transformative photonic solutions. Xscape Photonics leverages groundbreaking advancements in silicon photonics to enable the replacement of conventional electronic wiring with high-speed optical interconnects.

ECONOMIC IMPACT

Xscape Photonics' innovative approach to photonic interconnects is pivotal in overcoming bottlenecks in data-intensive applications and setting new benchmarks for speed, power optimization, and scalability. The company's technology has the potential to significantly enhance the efficiency and performance of computing infrastructure and reduce the energy demands fueling AI. These innovations could lead to substantial economic benefits by reducing operational costs and increasing productivity in sectors reliant on high-speed data transmission.

BIG PICTURE

Columbia University plays a pivotal role in driving innovation and economic development through its robust research capabilities and technology transfer initiatives. Columbia Technology Ventures (CTV), the university's tech transfer office, is at the forefront of this effort, managing a significant portfolio of intellectual property and fostering commercialization of groundbreaking research.

A key driver behind this innovation is the federal funding Columbia receives. Columbia University receives approximately $800 million annually from U.S. government agencies. This federal funding is crucial in supporting cutting-edge research across various disciplines and driving innovation to address pressing societal challenges.

DARTMOUTH COLLEGE

Dartmouth

SPARKS ECONOMIC GROWTH

Generate Biomedicines, Inc. is a pioneering biotechnology company at the forefront of AI-driven protein therapeutics discovery and development. It owes its origins to federally funded research – supported by the National Science Foundation and the National Institutes of Health – that was conducted at Dartmouth College.

ABOUT THE COMPANY

Generate : Biomedicines
A Flagship Pioneering Company

Generate Biomedicines, Inc. brings together groundbreaking machine learning and biological engineering technology to help create breakthrough medicines. Its Generate Platform can quickly and accurately design medicines on demand for a wide range of therapies.

ECONOMIC IMPACT

Generate Biomedicines, located in Somerville, Massachusetts, employs 325 people and drives consistent economic growth by attracting and retaining a highly skilled biotechnology and artificial intelligence workforce. The company's AI-based platform also opens new markets for precision medicine, attracting significant investment and enhancing global competitiveness. The company raised $370 million in its Series B financing in November 2021, followed by a $273 million Series C round in September 2023, with new investors including Amgen, NVIDIA's venture capital arm, and Samsung's Life Science Fund joining in December 2024.

BIG PICTURE

Dartmouth College is a vital contributor to economic growth through its focus on federally funded research and technology transfer. The college's entrepreneurial ecosystem, anchored in its Office of Entrepreneurship and Technology Transfer, fosters the transformation of federally funded scientific discoveries into viable enterprises like Generate Biomedicines, bolstering the local, state, and national economy.

GEORGETOWN UNIVERSITY

Georgetown University

SPARKS ECONOMIC GROWTH

Georgetown University sparks economic growth by leveraging federally funded research to create groundbreaking medical technologies like conditional reprogramming, the human papillomavirus (HPV) vaccine Gardasil, and treatments for gastrointestinal cancers that save lives and drive medical innovations.

ABOUT THE COMPANY

Conditional Reprogramming: Developed by Dr. Richard Schlegel, Chair and Professor of the Pathology Department at Georgetown, conditional reprogramming is a revolutionary technology that allows researchers to grow both normal and cancerous epithelial cells in a completely new way. Funded partly by grants from the National Institutes of Health (NIH) and the Center for Cell Reprogramming, conditional reprogramming has enabled significant advances in cancer research and personalized medicine.

HPV Vaccine (Gardasil): Key findings by Dr. Richard Schlegel, Dr. A. Bennet Jenson, and Dr. Shin-je Ghim at Georgetown University Medical Center contributed to the development of the first HPV vaccine, Gardasil. This research, funded in part by the NIH, led to several international patents issued to Georgetown. Gardasil, now approved globally, has transformed the prevention of HPV-related cancers and diseases. Georgetown researchers also pioneered the first diagnostic test for HPV, further solidifying the university's role in combating the virus.

Innovative GI Cancer Treatments: Dr. Jill P. Smith's research on G-protein coupled receptors, particularly cholecystokinin receptors, has led to new treatments for gastrointestinal cancers. Supported by over 29 NIH and federal grants, her work has resulted in 12 issued patents, many of which are licensed to companies for commercialization.

ECONOMIC IMPACT

Gardasil has become a global product, with a profound market impact and the potential to save millions of lives worldwide. Conditional reprogramming technology – patented and exclusively licensed to the company Propagenix, now part of STEMCELL Technologies – is advancing toward commercialization, generating licensing payments and potential royalties. Meanwhile, Georgetown's innovative gastrointestinal cancer treatments have solidified the university's reputation as a leader in translating cutting-edge research into patented, commercially viable solutions.

BIG PICTURE

Between 2010 and 2020, Georgetown filed approximately 321 patent applications, averaging 32 patents per year, demonstrating a consistent pipeline of innovative technologies with commercial potential. The university has also established the Office of Technology Commercialization to manage invention disclosures, patenting, and licensing, and to assist Georgetown entrepreneurs in starting their own companies.

Backed by robust federal investments, Georgetown's cutting-edge research and strong commercialization infrastructure, continue to create new companies, develop notable technologies, and make meaningful advancements in the health care field and beyond.

HARVARD UNIVERSITY

SPARKS ECONOMIC GROWTH

Harvard University sparks economic growth by supporting companies like Beam Therapeutics and Editas Medicine, which both received funding from the National Institutes of Health and other federal agencies.

ABOUT THE COMPANIES

Beam Therapeutics was developed by David R. Liu, Professor of Chemistry and Chemical Biology at Harvard. He developed a suite of DNA-based editing technologies that enable precise genetic modifications without making double-stranded breaks in DNA. This innovation allows for more accurate and efficient gene editing. The foundational research was supported by federal funding from the National Institutes of Health (NIH).

Editas Medicine builds on Harvard's seminal contributions to the field of genome editing, including the development of Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) technologies. The company licensed technology developed by Harvard professors Dr. George Church and Dr. David Liu, along with researchers from partner institutions. Their findings made fundamental contributions to genome editing technologies, including CRISPR. These advancements opened new possibilities for developing gene-edited medicines to treat serious diseases.

ECONOMIC IMPACT

Beam Therapeutics has a market capitalization of $2.32 billion and a total trailing twelve-month revenue of $349.64 million as of late 2024. The company employs 374 people, contributing significantly to job creation in the biotechnology sector. Beam Therapeutics' innovative approach to base editing has attracted considerable investor interest, positioning it as a leader in the emerging field of precision genetic medicine.

Editas Medicine has a market capitalization of $156.02 million and a total trailing twelve-month revenue of $61.76 million as of late 2024. Editas Medicine employs 266 people and the company's focus on developing transformative gene editing therapies has the potential to address previously untreatable genetic diseases.

BIG PICTURE

Harvard's $1.02 billion in research funding in FY23 – 66% of which comes from federal sources – supports local jobs, businesses, and organizations. Harvard directly employs 18,718 Massachusetts residents. The university drives consistent economic growth by attracting and retaining a highly skilled workforce across various sectors.

The university's innovation ecosystem, including the Harvard Innovation Labs and the Pagliuca Harvard Life Lab, has launched more than 4,000 ventures since 2011 and raised more than $7 billion in capital. These startups – many of which are based in Massachusetts – create jobs and attract significant investment, enhancing the state's global competitiveness in key industries like biotechnology and life sciences.

JOHNS HOPKINS UNIVERSITY

SPARKS ECONOMIC GROWTH

Johns Hopkins University (JHU) drives economic growth in Baltimore and beyond by leveraging research supported by the National Institutes of Health (NIH) to launch groundbreaking companies like Haystack Oncology and Infinity Bio.

ABOUT THE COMPANIES

Haystack Oncology was founded on intellectual property licensed from JHU. The company focuses on highly sensitive liquid biopsies to detect minimal residual disease in cancer patients. Haystack raised $66 million in venture funding before being acquired by Quest Diagnostics for $300 million in 2023. The technologies licensed by Haystack were supported by funding from the NIH and the Department of Health and Human Services.

Infinity Bio also grew out of fundamental scientific research conducted at JHU that was supported and funded by the NIH. The company develops innovative solutions for cell and gene therapy workflows. It has raised $4 million in venture funding and established a lab in downtown Baltimore to help support the city's biotech innovation.

Johns Hopkins East Baltimore Innovation District where many university startups occupy temporary, subsidized lab and office space while they launch.

ECONOMIC IMPACT

Haystack Oncology reflects a cluster of early cancer detection ventures–including Thrive Earlier Detection, Personal Genome Diagnostics, and Delfi Diagnostics–that emerged from the same pool of JHU researchers. Collectively, these companies aim to detect cancer earlier using liquid biopsy techniques and have collectively raised over $1 billion in venture capital.

Haystack Oncology's 46 full-time staff are now employed at Quest Diagnostics and continue to contribute to the company's broader portfolio.

Infinity Bio employs 15 full-time staff and has catalyzed biotech development in Baltimore through its local lab space.

BIG PICTURE

Cancer diagnostics is one of many clusters within JHU's life sciences ecosystem. While Haystack Oncology exemplifies the cancer diagnostics cluster, infinity Bio highlights the diversity of JHU-supported ventures that drive innovation accross fields of biomedical science.

Nearly 87% of Johns Hopkins R&D funding comes from federal sources, enabling groundbreaking projects across diverse fields, such as human genetics and artificial intelligence. These federal investments in research help Johns Hopkins University strengthen its economic impact across the Balitmore region by driving innovation, creating jobs and attracting substantial private funding.

In 2022, Johns Hopkins and its affiliates directly and indirectly accounted for more than 93,643 jobs in Maryland alone. The university's activities generated nearly $15.1 billion in total economic impact, including direct employment, as well as indirect effects through purchasing, construction, and visitor spending.

MARQUETTE UNIVERSITY

SPARKS ECONOMIC GROWTH

Marquette University sparks economic growth by supporting innovative companies like BattlePeer Corp., Venus Rehabilitation Technologies LLC, and Water Intelligence LLC. Faculty members at Marquette conduct groundbreaking research that is focused on addressing and meeting societal needs.

ABOUT THE COMPANIES

BattlePeer Corp. addresses critical gaps in mental health care for veterans by digitizing peer-to-peer mentoring programs. Co-developed with community partners by researchers at Marquette and the Medical College of Wisconsin, the BattlePeer App provides veteran peer mentors with tools to identify early warning signs of distress and offers features like mentor-mentee matching and weekly check-ins. The app, developed over a decade with the support of federally funded research, blends cutting-edge technology with community insights to support veterans transitioning to civilian life.

Venus Rehabilitation Technologies focuses on lower-limb neurorehabilitation for stroke patients. The company's flagship product, CUped, improves mobility by targeting a patient's weaker leg independently. The device was developed from research funded by the U.S. Department of Education (ED) and the National Institutes of Health's Center for Translation of Rehabilitation Engineering Advances and Technology program. Venus exemplifies how federal support transforms academic research into real-world health care solutions.

Water Intelligence LLC has developed real-time wastewater monitoring technology with the support of the National Science Foundation's I-Corps grants and the Small Business Administration's Small Business Technology Transfer grants. The company's optical flow sensor technology helps municipalities reduce costs, prevent sewer overflows, and mitigate environmental risks.

Water Intelligence and Marquette help preserve and protect rivers and watersheds in Milwaukee and the Great Lakes watersheds.

ABOUT THE RESEARCH

Decarbonizing Heavy-Duty Engines: Dr. Adam Dempsey, Assistant Professor of Mechanical Engineering at Marquette University, researches ways to decarbonize heavy-duty engines by developing methane oxidation systems and alternative fuels. Supported by funding from the ED and the Office of Naval Research (ONR), Dr. Dempsey's work aims to enhance energy efficiency and reduce methane emissions.

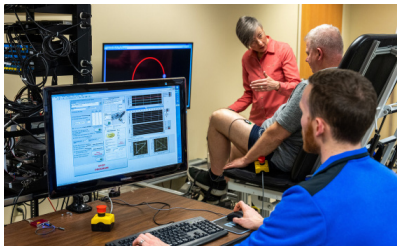
Electrifying Aviation and Ground Vehicles: Dr. Ayman EL-Refaie, Werner Endowed Chair in Secure and Sustainable Energy at Marquette University, is advancing rare-earth free electric drivetrains and high-power density motors for aviation and ground vehicles. With over $5 million and an additional $5.6 million in ED funding through the ASCEND program, these research projects respectively address supply chain challenges associated with rare-earth materials, and high-power-density electric drivetrains for hybrid and fully electric planes - helping position the U.S. as a leader in next generation electrification technologies.

Dr. Ayman EL-Refaie, Werner Endowed Chair in Secure and Sustainable Energy at Marquette holds a model of a 3D-printed electric motor component designed for aviation.

ECONOMIC IMPACT

BattlePeer Corp. provides scalable peer-support solutions through its app. With plans to expand services to first responders and individuals with chronic illnesses, BattlePeer's innovative approach improves mental health outcomes while reducing health care costs.

Water Intelligence LLC revolutionizes wastewater management, providing municipalities with real-time data to prevent costly sewer overflows and backups. Water Intelligence's technology drives economic savings for municipalities while addressing critical public health challenges.



Dr. Sheila Schindler-Ivens, Associate Professor, Founder and President of Venus Rehabilitation Technologies, LLC guiding a stroke patient on how to use a lab prototype of CUPed for effective rehabilitation.

BIG PICTURE

Marquette's commitment to federally funded research fosters considerable economic growth for Wisconsin and for America. In FY23, Marquette received $34 million in research funding. Marquette University exemplifies how academic research and innovation fuel economic growth. Across a wide array of fields and industries – including mental health, wastewater management, and energy – Marquette's ecosystem of innovation is creating jobs, attracting investment, and enhancing our nation's technological leadership on the global stage.

NEW YORK UNIVERSITY

SPARKS ECONOMIC GROWTH

Heliotrope Photonics, Inc. and BeneVir Biopharm are two companies that grew out of federally funded scientific research projects at New York University (NYU). The coating technology that underpins Heliotrope Photonics' solar energy solutions was developed through research supported by the National Science Foundation (NSF). Benevir Biopharm formed from National Institutes of Health-supported research that paved

ABOUT THE COMPANIES

Founded in 2023, Heliotrope Photonics helps revolutionize solar energy by enhancing solar panel performance. The company's transformative coating technology increases solar panel efficiency by up to 15%.

BeneVir
active immunotherapy against evolving tumors

BeneVir Biopharm develops oncolytic immunotherapies utilizing a proprietary T-Stealth™ Oncolytic Virus Platform to engineer oncolytic viruses, tailored to infect and destroy cancer cells.

ECONOMIC IMPACT

Heliotrope Photonics is in its early stages, but is poised to deliver significant economic and environmental benefits. By improving solar panel efficiency, the company reduces energy costs for consumers and accelerates the adoption of renewable energy, creating opportunities for market expansion and cleantech job growth.

BeneVir Biopharm was acquired by Johnson & Johnson for $140 million upfront, with potential contingent payments of up to $900 million. Benevir exemplifies the substantial value of translating federally funded science into commercial success.

BIG PICTURE

NYU serves as a critical hub for translating federally funded research into economic and societal benefits. Through its Technology Opportunities & Ventures Department, NYU enables discoveries like those behind Heliotrope Photonics and Benevir Biopharm to become market-ready innovations.

NORTH CAROLINA STATE UNIVERSITY

NC STATE UNIVERSITY

SPARKS ECONOMIC GROWTH

North Carolina State University (NC State) sparks economic growth by supporting innovative companies like SinnovaTek, InsightFinder, and Atmospheric Plasma Solutions (AP Solutions). This diverse portfolio of innovative companies and research projects demonstrates how academic research – supported by federal funding – creates jobs, attracts investment, and strengthens America's technological leadership.

ABOUT THE COMPANIES

SinnovaTek is revolutionizing the food processing industry with technology that originated from NC State research. Backed by three U.S. Department of Agriculture Small Business Innovation Research (SBIR) awards, the company has expanded its footprint by building a 100,000-square-foot processing facility in Nash County, NC, and creating 73 jobs in the region. SinnovaTek has also facilitated the launch of over 100 Food and Drug Administration-approved products and spun out two additional companies: SinnoVita, which develops value-added ingredients from nutrient-rich raw materials, and FirstWave Innovations, which accelerates the market entry of novel food products.

Gridbridge provides electric utility customers with innovative power delivery solutions. It was funded by over $3 million in SBIR awards from the National Aeronautics and Space Administration, National Science Foundation, Department of Energy, and Department of Defense (DoD).

AP Solutions leveraged more than $3 million in SBIR funding from the DoD to develop non-thermal plasma surface treatment technology that helps remove coatings and sealants, clean contaminants, and prepare the external surfaces of vehicles and vessels for adhesion. The company's PlasmaBlast PB7000-M tool is used by the U.S. Navy, U.S. Army, shipyards, and Fortune 100 companies worldwide. AP Solutions has created 17 jobs and continues to drive industry innovation.

ECONOMIC IMPACT

SinnovaTek's Nomatic processing system helps reduce food waste and improves access to high-quality food processing technology. The company has seen approximately $1.5 million in sales and raised over $1.3 million in additional funding and investments.

Gridbridge's successful acquisition by ERMCO in 2017 demonstrates the economic potential of university-supported startups in the power delivery sector. The company's innovative power delivery systems have applications in the utilities and commercial power sectors, and help modernize our nation's energy infrastructure.

AP Solutions' groundbreaking plasma technology has earned several government contracts, including a U.S. General Services Administration (GSA) schedule contract for its PlasmaBlast PB7000-M mobile surface preparation tool, underscoring its growth potential in government and commercial markets.

BIG PICTURE

Federally funded scientific research enables NC State researchers to found new companies, develop unique innovations, and drive considerable economic growth for North Carolina and for the United States. These companies represent just a fraction of NC State's economic impact. The university's approach to research and commercialization spurs job creation, attracts large-scale investments, and helps American maintain its technological leadership.

1.7B+
FINANCING RAISED BY NC STATE STARTUPS

800+
COMMERCIALIZATION AGREEMENTS

1.5K+
PATENTS ISSUED

8.5K+
TOTAL JOBS CREATED

600+
PRODUCTS TO MARKET

5K+
INVENTION DISCLOSURES

NORTHEASTERN UNIVERSITY

Northeastern University

SPARKS ECONOMIC GROWTH

ABOUT THE COMPANIES

Flightpath Biosciences is advancing narrow-spectrum, gut-sparing antibiotics for treating spirochetal infections like Lyme disease. The company's innovations are based on groundbreaking research conducted by Dr. Kim Lewis, Professor of Biology at Northeastern and supported by federal funding from the National Institutes of Health. This federal investment was instrumental in advancing preclinical proof-of-concept studies, which provided the scientific foundation for Flightpath's licensed antibiotic drug candidate.

Scipher Medicine is a biotech spinoff from Northeastern University that applies network medicine approaches to precision medicine, which helps tailor the most effective therapies for patients with autoimmune diseases. Founded in 2014 by Dr. Albert-László Barabási, Professor of Network Science at Northeastern University, and Dr. Joseph Loscalzo, Professor of the Theory and Practice of Medicine at Harvard Medical School, Scipher's Disease Module Detection was created from a Northeastern-developed algorithm that identifies disease-associated genes and discovers therapeutic protein targets. This novel technology was created with federal funding and later licensed to Scipher, enabling the company to advance its research into patient and molecular data analysis.

MatrixSpace, co-founded by Northeastern University alumni Greg Waters and Professor Jose Martinez Lorenzo, leveraged federal funding to develop cutting-edge sensing and AI technologies that are crucial for national defense. The company's initial project was funded by a Small Business Innovation Research (SBIR) grant from the U.S. Air Force in 2021. MatrixSpace's AI sensing systems revolutionize outdoor monitoring by combining radar, optical sensors, and AI for real-time object detection and tracking. This technology enables smart sensors to visualize and identify objects, their distance and speed, and collect and report that data in real-time, providing information that supports security, safety, and autonomy applications.

Metamagnetics Inc., founded by Northeastern University Distinguished Professor and William Lincoln Smith Chair Professor Vincent Harris, builds upon research funded by the Office of Naval Research at the Naval Research Laboratory and Northeastern University. The company specializes in developing advanced radio frequency materials for the aerospace and defense sectors. Metamagnetics' journey from relying on SBIR grants to working on larger Department of Defense programs showcases the importance of sustained federal support in nurturing defense technology innovation. As a veteran-owned small business, Metamagnetics exemplifies how federal funding can support both technological innovation and veteran entrepreneurship in the defense sector.

ECONOMIC IMPACT

Flightpath Biosciences has raised over $11 million in private funding and won several National Institute of Allergy and Infectious Diseases grants. Moving forward, the company plans to raise Series B financing in 2025, which will enable it to grow its team and further advance its mission.

Scipher has demonstrated significant economic growth since its inception. The company has raised $237 million in funding, created 200 jobs, and generated $20 million in revenue—nearly half of which was achieved in 2024. Following its most recent investment round in 2022, Scipher was privately valued at $500 million.

MatrixSpace's growth demonstrates the success of federal investment in defense innovation. They have raised nearly $40 million in funding and generated over $2 million in commercial revenues in 2024. MatrixSpace projects a fourfold increase in 2025, with plans for substantial staff expansion.

Metamagnetics reported annual revenue of $15.8 million in 2024, representing a 37% growth from 2023 and projects a 2025 revenue of $21 million, indicating a 33% growth. While market penetration remains low, increased adoption of their products suggests significant room for growth.

BIG PICTURE

Flightpath Biosciences, Scipher Medicine, MatrixSpace, and Metamagentics exemplify how federally funded research at American colleges and universities can lead to breakthrough discoveries that fuel new commercial ventures and directly address critical challenges. These companies collectively demonstrate the significant economic impact of Northeastern University's research initiatives, contributing to job creation, technological innovation, and economic growth across various sectors including biotechnology and defense.

NORTHERN ILLINOIS UNIVERSITY

SPARKS ECONOMIC GROWTH

Northern Illinois University (NIU) demonstrates the transformative power of federally funded research through breakthrough technologies in clean energy, battery research, infant care, and medical imaging. These innovations, developed in collaboration with federal agencies and research institutions, underscore NIU's contribution to economic growth and societal well-being.

ECONOMIC IMPACT

Northern Illinois University stands at the intersection of federal funding, academic research, and industrial application. Collaborations with Argonne National Laboratory, the National Renewable Energy Laboratory, and private companies underscore NIU's commitment to translating groundbreaking discoveries into tangible economic benefits.

Clean Energy and Carbon Capture:
In collaboration with Argonne National Laboratory, NIU researchers are converting carbon dioxide emissions into valuable products, including:

- Ethanol for gasoline additives.
- Acetic acid for household cleaning products.
- Formic acid for use in leather, rubber, and textile industries.

This research provides a pathway to reduce greenhouse gas emissions while creating commercially valuable products for diverse markets.

Perovskite Solar Cells (PSCs):
NIU researchers, with support from the National Renewable Energy Laboratory, are addressing the key challenges of stability, scalability, and toxicity in PSCs. These efforts aim to make this promising solar technology more adaptable for widespread commercial use, improving energy efficiency and affordability in the solar energy sector.

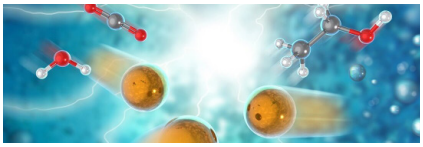
Alkali-Metal Battery Research:
In collaboration with Argonne National Laboratory, research led by Tao Li investigates the behavior of liquid electrolytes in high-energy batteries, such as those used in electric vehicles. By understanding electrolyte movement and interactions, the team will gain insights to improve the durability and performance of alkali-metal batteries, which are stronger and cheaper than current alternatives.

Active Noise Control (ANC) and Communication Device for Infant Incubators: Supported by federal grants, NIU's Interim Director for Biomedical Engineering and Professor Lichuan Liu developed an ANC device that reduces harmful noise levels in neonatal intensive care units while enabling two-way communication between infants and caregivers. Licensed to Invictus Medical, the device received FDA clearance in 2023, setting a new standard in neonatal care.

Proton Computed Tomography (pCT):
In collaboration with ProtonVDA, NIU researchers have developed a high-performance, low-cost proton radiography system. This system enhances proton radiation therapy by providing more precise imaging, reducing radiation exposure, and improving treatment outcomes, particularly for cancer patients with high survival rates.

BIG PICTURE

NIU's operations contribute a total of 7,642 jobs and $949.3 million in output for the Northern Illinois region. About 866 jobs and $196 million in output are contributed through the indirect effect, attributable to NIU purchasing from vendors in the region. About 1,298 jobs and $269.3 million in output are attributed to the induced effect as employees spend their earnings in the region. NIU was ranked third nationally by the George W. Bush Institute and Opus Faveo Innovation Development for innovation impact productivity – the return on investment that the University generates for every research dollar it spends.



Artistic rendering of electrocatalytic process for conversion of carbon dioxide and water into ethanol. (Image courtesy of the U.S. Department of Energy's Argonne National Laboratory.)

OLD DOMINION UNIVERSITY

SPARKS ECONOMIC GROWTH

ABOUT THE COMPANIES

Research partnerships with Old Dominion University (ODU) have nurtured two successful biomedicine companies: ReAlta and Pulse Biosciences. Founded in 2018, ReAlta Life Sciences emerged following a decade of National Institutes of Health-funded research by faculty at Eastern Virginia Medical School (EVMS), now part of Macon & Joan Brock Virginia Health Sciences at Old Dominion University. Their studies of the human complement system and inflammatory pathways resulted in the development of a novel peptide inhibitor, forming the foundation of ReAlta's intellectual property.

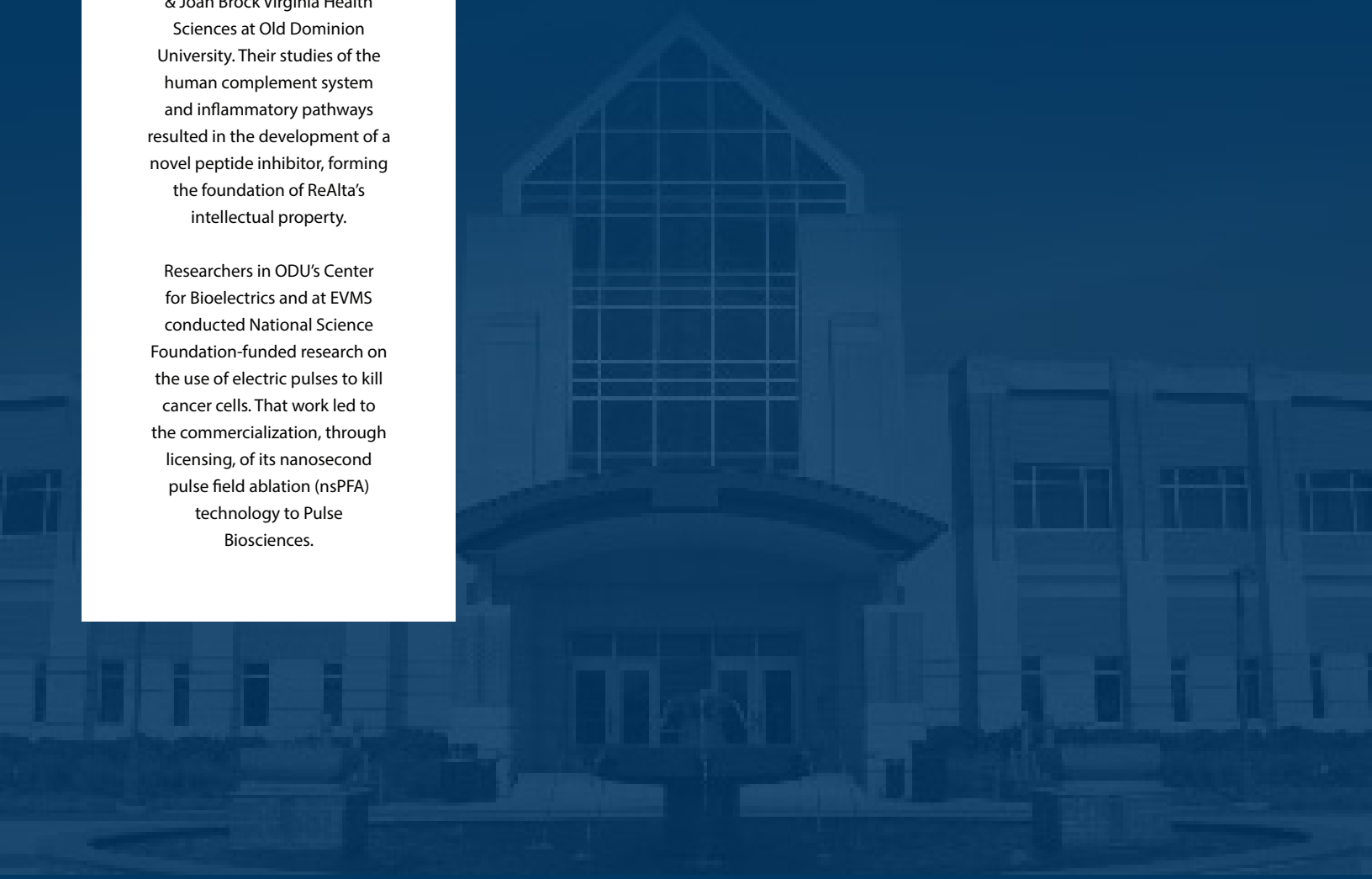
Researchers in ODU's Center for Bioelectrics and at EVMS conducted National Science Foundation-funded research on the use of electric pulses to kill cancer cells. That work led to the commercialization, through licensing, of its nanosecond pulse field ablation (nsPFA) technology to Pulse Biosciences.

ECONOMIC IMPACT

The research conducted at ODU contributed to regional and national economic growth. ReAlta is headquartered in Norfolk, VA, employs nearly 20 full-time employees, and has raised $90 million in funding. Pulse Biosciences has grown its market capitalization to $1.5 billion as of 2025.

BIG PICTURE

Old Dominion University plays a pivotal role in Virginia's economy. Following its 2024 integration of Eastern Virginia Medical School to form Macon & Joan Brock Virginia Health Sciences at Old Dominion University, the institution contributes $3.8 billion annually in GDP. The medical school generates an estimated 4,900 additional jobs through its ripple effect on the local economy.



PENN STATE UNIVERSITY

SPARKS ECONOMIC GROWTH

Phospholutions, Inc., a sustainable agriculture technology company, was born out of Penn State's research enterprise and supported by federal funding.

ABOUT THE COMPANY

Phospholutions, Inc. seeks to enhance the efficient use of l phosphorus – the second-largest nutrient used in food production worldwide. The company's core technology, RhizoSorb®, was developed from university research aimed at improving phosphorus use efficiency in agriculture. Phospholutions was nurtured through Invent Penn State's entrepreneurial ecosystem, such as the Happy Valley LaunchBox and the Summer Founders Program powered by PNC Bank, which helped founder Hunter Swisher, a Penn State alumnus, gain mentorship, funding opportunities, and business development support.

ECONOMIC IMPACT

Sustainable agriculture technology boosts economic growth in the U.S. by increasing efficiency and crop quality, leading to higher yields and better market prices. It creates jobs in various sectors and opens new markets driven by consumer demand for sustainably produced goods. Additionally, these technologies enhance resilience to climate change and promote rural development, contributing to overall economic stability and public health.

BIG PICTURE

Penn State contributes over $12.1 billion annually to the Commonwealth's economy. This impact supports and sustains 81,278 jobs across Pennsylvania. The university's Office of Technology Transfer helps boost local, state, and national economies by helping transfer research – much of it supported by federal investments in fundamental science – into marketable products. In 2023, the Penn State research enterprise saw 220 invention disclosures, 40 U.S. patents issued, 8 startup companies formed, and 42 licenses and options executed.

PRINCETON UNIVERSITY

PRINCETON UNIVERSITY

SPARKS ECONOMIC GROWTH

ABOUT THE COMPANY

EnCharge AI

EnCharge AI, founded in 2022 by Princeton University Professor Dr. Naveen Verma, is transforming the AI industry with its innovative analog in-memory computing technology. Supported by federal funding from the National Science Foundation and the Department of Defense's Defense Advanced Research Projects Agency (DARPA), this technology was developed in Dr. Verma's lab at Princeton from 2015 to 2022.

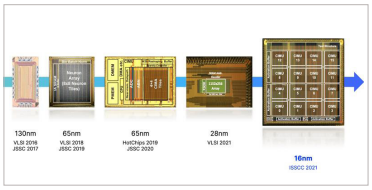
EnCharge AI holds an exclusive license to use these federally supported innovations, enabling the design and production of AI chips that achieve unprecedented energy efficiency compared to existing commercial processors. The company, headquartered in Santa Clara, California, is poised to make localized AI processing a reality, reducing reliance on energy-intensive cloud data centers and enabling new AI applications in devices such as smartphones, vehicles, and industrial tools.

ECONOMIC IMPACT

EnCharge AI has already demonstrated significant economic potential. The company has raised $44.3 million in private investment and secured a $18.6 million grant from DARPA's Optimum Processing Technology Inside Memory Arrays (OPTIMA) program. Currently employing around 50 people, EnCharge AI's advancements are set to drive economic growth in multiple sectors by creating new markets and enhancing the efficiency of AI deployment.

Princeton Professor of Computer Engineering Dr. Naveen Verma is the Co-Founder of EnCharge AI. In addition, two former graduate students from Dr. Verma's lab, Jinseok Lee and Murat Ozatay, are now employees at EnCharge AI. The anticipated economic impact extends beyond immediate job creation, as the company's revolutionary chips could lower costs, expand AI capabilities, and enable applications in sectors previously constrained by energy or computational limitations.

From left to right: EnChargeAI co-founders Echere Iroaga, Dr. Naveen Verma, and Kailash Gopalakrishnan.



The evolution of the five generations of prototypes developed by Dr. Naveen Verma at Princeton University, prior to launching EnChargeAI.

SPARKS ECONOMIC GROWTH

ABOUT THE COMPANY

BlackBox Biometrics, Inc., founded in 2011 by Dr. David Borkholder, is a pioneering technology company focused on developing advanced sensor technologies to monitor and assess concussive forces that can lead to traumatic brain injuries. The company originated from research conducted at the Rochester Institute of Technology (RIT), where Dr. David Borkholder, a professor in the College of Engineering, and his team created the Blast Gauge® System. This innovative device is designed to measure the impact of explosive blasts on military personnel and has been widely used by U.S. and international military forces and law enforcement agencies.

ECONOMIC IMPACT

The initial development of the Blast Gauge® System was funded by a grant from the Defense Advanced Research Projects Agency (DARPA) in 2010. This federal support enabled Dr. Borkholder and his team to rapidly design, develop, test, and deploy 1,000 units to DARPA within just one year. Federal funding continued to play an important role in the company's growth and product development activities, with BlackBox partnering with DoD stakeholders to develop multiple iterations of next generation Blast Gauge® Systems.

BIG PICTURE

BlackBox Biometrics was formed out of a research project originating at RIT's Venture Creations business incubator, where young companies can advance their concepts to become profitable, viable businesses by using resources such as coaching, networking and connections to potential investors.

The company graduated from RIT's incubator in 2014.

RUTGERS UNIVERSITY

SPARKS ECONOMIC GROWTH

Rutgers University has a strong track record of research, discovery, and innovation, that improves people's lives. State-of-the-art core facilities and services available for Rutgers' researchers and industry partners have sparked economic growth at companies like PTC Therapeutics, Inc.

ABOUT THE COMPANY

PTC Therapeutics, Inc. focuses on developing and commercializing innovative therapies for rare genetic disorders and other diseases with high unmet medical needs. The company's foundation stems from a novel, targeted approach towards drug discovery, which was developed through research supported by the National Institutes of Health.

ECONOMIC IMPACT

PTC Therapeutics has made a significant economic impact since its inception. The company has created over 200 jobs, many of which are located in the central New Jersey region. In 2023, PTC Therapeutics reported total revenues of $938 million, representing 34% year-over-year growth. PTC has expanded its global reach with products available in multiple countries and ongoing clinical trials worldwide.

BIG PICTURE

Rutgers University's research and innovation ecosystem has achieved remarkable heights with its extensive network of over 300 research centers and institutes driving groundbreaking discoveries. This robust infrastructure supports a diverse portfolio of more than 1,300 active patents worldwide and has fostered the creation of over 100 startups tackling complex societal challenges. The university's collaboration with industry partners, such as PTC Therapeutics, has significantly contributed to economic growth in the region.

Rutgers' research initiatives are pivotal in stimulating job creation and economic development, particularly in central New Jersey. As Rutgers continues to expand its research capabilities and partnerships, it is poised to further enhance its role as a driver of economic growth and innovation in New Jersey.

STANFORD UNIVERSITY

SPARKS ECONOMIC GROWTH

Google, the search engine, emerged from federally funded research at Stanford University. It started as a project called BackRub, led by Ph.D. students Larry Page and Sergey Brin, with critical support from the National Science Foundation (NSF).

ABOUT THE COMPANY

NSF funding played a pivotal role in laying the groundwork for what would become one of the most influential technology companies in the world. It led the multi-agency Digital Library Initiative that funded the BackRub project at Stanford, providing equipment for the BackRub prototype and supporting Sergey Brin through a Graduate Student Fellowship.

From these humble beginnings, Google has evolved into a technology powerhouse, now part of the larger Alphabet Inc. organization. The company's reach extends far beyond its initial search engine focus, encompassing a diverse range of cutting-edge products and services including advertising, cloud computing, artificial intelligence, and hardware. Alphabet has also ventured into providing internet access through Google Fiber, offering high-speed connectivity in select U.S. cities. They have also initiated projects like Taara, which uses light beams to deliver internet to remote areas. These innovative endeavors demonstrate the company's commitment to pushing technological boundaries and improving community connectivity.

ECONOMIC IMPACT

Valued at more than $2 trillion, Alphabet employs more than 180,000 people across the United States. It's economic reach and impact extends far beyond direct employment. The Google Career Certificate program has graduated 250,000 Americans, providing them with job-ready skills and training in fast-growing fields like artificial intelligence, cybersecurity, data analytics, e-commerce, and more. The company also offers pro-bono upskilling, reskilling, and training opportunities to hundreds of thousands of students — and people currently employed in the public and private-sector workforce — helping improve Americans' digital literacy.

Alphabet has revolutionized access to information, transformed digital advertising, and shaped industries through innovations in search, AI, cloud computing, and mobile technology, making it a driving force in the global technology landscape. Its products and services have tremendous downstream impacts too, helping small businesses maximize efficiencies and processes and allowing operations to grow and thrive. Alphabet has also invested more than $2 billion in a diverse array of suppliers and $26 million in funding for American startups across the country through its Founders Funds.

BIG PICTURE

The success of Google and Alphabet underscores the significant role of federal funding in fostering innovation and economic growth. The NSF's support of early-stage research at Stanford University exemplifies how government investments can lead to groundbreaking technologies and companies that transform industries to create substantial economic value. Today, Alphabet continues to invest heavily in research and development, with over $40 billion spent in the U.S. in recent years, and is committed to expanding its presence across the country through significant investments in offices and data centers.

The ongoing relationship between Google and Stanford University continues to advance information technology. Google has endowed graduate fellowships and a professorship at Stanford and supports numerous technology projects. Many Stanford faculty members have worked at Google, and the company has licensed Stanford inventions, such as research professor Sebastian Thrun's technology that is incorporated into Google's Street View. This collaboration demonstrates the enduring impact of academic-industry partnerships on innovation and economic development.

STONY BROOK UNIVERSITY

Stony Brook University

SPARKS ECONOMIC GROWTH

Stony Brook University fosters cutting-edge innovation by bridging academia and industry through scientific research initiatives. A prime example is quantum networking pioneer, Qunnect, a university spinout that has received several grants from the U.S. Department of Energy (DOE), U.S. Air Force, and National Science Foundation to advance secure communication technologies.

ABOUT THE COMPANY

Qunnect

Qunnect was born in 2017 out of research from Stony Brook University physics professor Eden Figueroa and doctoral student Mehdi Namazi, the company's co-founder and chief scientific officer. Qunnect develops novel technologies for the quantum internet, a highly secure, next-gen network that uses single photons to transmit encrypted data. The company's innovations include the Qu-Mem, a room-temperature quantum memory system, and the GothamQ Quantum Loop, a 21-mile urban fiber test bed that validates quantum communication under real-world conditions.

ECONOMIC IMPACT

Qunnect employs 18 people and is poised for continued growth. Its GothamQ project, based in Brooklyn Navy Yard, has positioned New York City as a hub for quantum technology. In October 2022, the company secured an $8.5 million venture capital round led by Airbus Ventures. Building on this momentum, Qunnect raised an additional $5 million in January 2025, highlighting sustained investor confidence in the company's innovations.

BIG PICTURE

A significant portion of Stony Brook's overall finances — about 20 percent — comes from federal sources. But when it comes to research funding, the share is much higher. In fact, funding from federal agencies enables the University to contribute more than $8.93 billion to Long Island's economy. Stony Brook's Center of Excellence in Wireless and Information Technology incubates startups, spinouts, and private ventures like Qunnect. By encouraging innovation across several critical fields — like quantum networking, energy, and biomedical engineering – Stony Brook University helps catalyze scientific discovery and economic prosperity in the State of New York and across the nation.

SYRACUSE UNIVERSITY

SPARKS ECONOMIC GROWTH

Syracuse University is an expert at turning resources garnered from federal funding into innovative technology, fueling economic growth and aiding defense innovation.

ABOUT THE COMPANY

ANDRO Computational Solutions, LLC is a privately held advanced computing company founded in 1994. ANDRO partnered with the Center for Advanced Systems and Engineering (CASE) at Syracuse in 1996 to develop and commercialize information fusion technologies for enhancing battlespace situational awareness. Since then, CASE has provided ANDRO with assistance from graduate students and tenured research professors from Syracuse University's Electrical Engineering and Computer Sciences Department. ANDRO's technological breakthroughs have helped aid America's defense organizations, servicing groups like the Missile Defense Agency, Air Force Research Laboratory, Air Force Office of Scientific Research, U.S. Army Communications-Electronics Research, Development and Engineering Center at Aberdeen Proving Grounds, and the U.S. Navy Air Warfare Center. Syracuse's CASE Center receives a large portion of its funding from federal grants allowing them to conduct research projects and assist in commercializing innovative technologies.

ECONOMIC IMPACT

ANDRO Computational Solutions LLC supports nearly 50 staff members in the tech and electrical engineering sectors, with offices in Syracuse, San Diego, and Dayton. Thanks to their collaboration with Syracuse's CASE Center, ANDRO has been able to secure several Small Business Innovation Research and Small Business Technology Transfer contract awards with the Department of Defense and other military agencies. ANDRO has grossed tens of millions of dollars in revenue, enhancing Syracuse's reputation as an emerging tech hub.

BIG PICTURE

Syracuse University maximizes its economic impact by leveraging federally funded research to aid in commercializing innovative ventures. Through its CASE Center, the university supports an entrepreneurial ecosystem that turns research innovations into successful ventures such as ANDRO Computational Services LLC.

THE OHIO STATE UNIVERSITY

SPARKS ECONOMIC GROWTH

City Therapeutics, co-founded by The Ohio State University professor Kotaro Nakanishi, is developing groundbreaking RNA interference (RNAi) therapeutics to improve treatments for a wide range of diseases.

ABOUT THE COMPANY

City Therapeutics is leveraging this technology to develop a pipeline of next-generation RNAi medicines with improved potency and expanded therapeutic reach. With the support of several federal investments from the National Institutes of Health, the company conducts multiple research endeavors on small interfering RNAs and cleavage-inducing tiny RNAs. These tiny RNA molecules target diseases that were previously considered "undruggable" and difficult to target by conventional therapies. This federally funded work has led to key discoveries that formed the foundation of City Therapeutics' technology platform.

ECONOMIC IMPACT

City Therapeutics recently emerged with a $135 million Series A funding round, the largest ever Series A investment for an Ohio State startup. This substantial investment underscores the company's potential for significant economic impact in the biopharmaceutical space. The company aims to begin clinical development of its lead program by the end of 2025 and plans to submit one to two new Investigational New Drug applications to the U.S. Food and Drug Administration every year starting in 2026. This pipeline will drive future job creation and economic growth as programs advance.

BIG PICTURE

The Ohio State University has established several programs to support commercialization of research, including the Accelerator Awards, which provide up to $150,000 to advance promising technologies in partnership with the State of Ohio. The university also facilitates the transformation of its fundamental scientific research into innovative companies and products through the Enterprise for Research, Innovation, and Knowledge. These efforts have resulted in over 300 active licensing deals based on Ohio State technology and more than 800 active U.S. -issued patents.

UNIVERSITY AT ALBANY

SPARKS ECONOMIC GROWTH

The University at Albany generates $1.1 billion in economic activity annually for New York's Capital Region. It serves as a significant workforce pipeline into industries like chip manufacturing and biotechnology, which are critical to the region's economic prosperity.

ABOUT THE COMPANY

SupreMEtric LLC was founded by University at Albany (UAlbany) Williams-Raycheff Endowed Professor of Chemistry Igor Lednev. The company leverages a technology that uses laser based Raman spectroscopy and advanced statistics to improve forensic science by helping investigators rapidly identify traces of bodily fluid found at crime scenes at the molecular level. Supported by more than $1 million in National Science Foundation Small Business Technology Transfer (STTR) funding, SupreMEtric's innovations provide law enforcement cutting-edge tools to solve violent crimes by accelerating the speed at which they receive critical investigatory information.

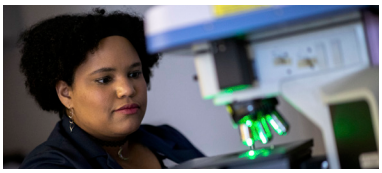
sxRNA Technologies Inc. is led by Professor Scott Tenenbaum of UAlbany's College of Nanotechnology, Science, and Engineering. The company is pioneering RNA technology to revolutionize the treatment and prevention of Alzheimer's disease. With $500,000 in STTR support from the National Institute on Aging, sxRNA is exploring how aging brain cells influence dementia progression and creating novel therapeutics using RNA switches to interrupt that process.

ECONOMIC IMPACT

SupreMEtric LLC: Based on the campus of the University at Albany Biosciences Development Corp., SupreMEtric is part of the robust biotechnology startup sector in New York's Capital Region. Its advanced forensic tools create high-value jobs in the technology and health care sectors while also meaningfully contributing to public safety.

sxRNA: Located in Albany, sxRNA bolsters economic growth by exploiting advances in RNA-based therapeutics, an area of enormous potential growth. The company's focus on Alzheimer's disease requires it to confront a substantial global health challenge, that in turn will catalyze biotech innovation and enhance health care infrastructure.

SupreMEtric and sxRNA exemplify the potential for academic research to fuel entrepreneurial ventures that address pressing societal challenges in public safety and health, simultaneously fostering economic growth and job creation.



SupreMEtric's Chief Operating Officer and UAlbany Ph.D. graduate, Alexis Weber, in the lab with UAlbany Professor Igor Lednev, SupreMEtric's founder.

BIG PICTURE

UAlbany is committed to stimulating economic growth by commercializing federally funded research in the public's interest. Through a startup-focused culture led by the Office of Economic Development, Entrepreneurship, and Industry Partnerships, the university supports faculty in translating their scientific discoveries into marketable solutions that solve real societal problems.

Many of these startup activities arise from UAlbany's core research strengths in atmospheric sciences, cybersecurity, emergency preparedness, RNA science, artificial intelligence, and semiconductor and microelectronics engineering.

The university also is a major regional hub for federal and industry investment. For two decades, the College of Nanotechnology, Science, and Engineering has been a key academic partner at Albany NanoTech Complex, North America's most advanced semiconductor research and development facility. In 2024, the complex, owned and operated by NY CREATES, was chosen to receive $825 million as host of the National Semiconductor Technology Center's state-of-the-art EUV Accelerator, a major win for Upstate New York's high-technology sector and the semiconductor lab-to-fab model deployed at the complex.

UNIVERSITY AT BUFFALO

University at Buffalo
The State University of New York

SPARKS ECONOMIC GROWTH

The University at Buffalo (UB) sparks economic growth by leveraging its research capabilities and fostering innovation through startup support. With an annual economic impact of $1.7 billion, including over $348.2 million in research spending, UB serves as a major economic engine for Buffalo, Niagara, and upstate New York, creating a knowledge-based economy that drives regional development.

ABOUT THE COMPANIES

Founded in 2022, Copprium, Inc. develops copper-based conductive inks for flexible electronics. The company's technology was developed at the University at Buffalo through funding from the National Science Foundation, U.S. Army, and U.S. Air Force Research Labs. Copprium received support from the Center for Excellence in Materials Informatics (CMI), which assisted in developing project plans and provided guidance in securing the Fuzehub Jeff Lawrence Manufacturing Innovation Fund in 2022. Copprium was also recognized with an innovation award at the 2023 TechConnect World Innovation conference in Washington, D.C.

POP BIOTECH

Similarly, another company benefiting from federal funding and UB's innovation is POP Biotechnologies (POP BIO). POP BIO develops therapies for cancer and infectious diseases. The company's core Spontaneous Nanoliposome Antigen Particleization (SNAP) vaccine platform technology was developed through funding from the National Institutes of Health (NIH). POP BIO has received a $600,000 NIH contract for HIV vaccine development and additional funding from the University at Buffalo for Alzheimer's research. Recently, POP BIO was accepted into the National Cancer Institute Nanotechnology Characterization Laboratory to support the development of a potent cancer vaccine system, further advancing its cancer vaccine development efforts.

ECONOMIC IMPACT

Copprium's inks offer a cost-effective alternative to silver inks in the $3.8 billion conductive ink market. The company received initial funding from the Buffalo Innovation Accelerator Fund and has since raised $325,000 in non-dilutive funds, including a recent $100,000 investment from UB through the Buffalo Innovation Seed Fund.

POP BIO has made substantial progress in vaccine development. The company recently received a $2.84 million Phase II Small Business Innovation Research grant from the National Institute of Allergy and Infectious Diseases. They are using this funding to develop a vaccine called SNAP-Flu that uses their proprietary SNAP technology and can protect against multiple strains of the flu.

BIG PICTURE

UB serves as a catalyst for economic growth in Western New York through its research activities and support for startups. UB is among New York's top 10 recipients of federal grant dollars from the NIH, receiving 220 grants totaling $87.8 million in 2023. The university's Business and Entrepreneur Partnerships (BEP) office provides crucial support to startups, including initial funding, guidance, and resources such as incubator space. BEP has supported the launch of 397 startups, created 1,700 jobs from FY22-24, and contributed to an economic impact of $788 million, further solidifying UB's role as a catalyst for regional innovation and economic growth.

UB's technology transfer program assists in patenting and licensing university-developed technologies, as seen with both Copprium and POP BIO. The university's Center for Advanced Technology awarded more than $495,000 to companies working with UB researchers on innovations for drug development, medical diagnostics, and other health sciences projects in 2024.

UB is also part of the NY SMART I-Corridor Tech Hub, advancing domestic semiconductor manufacturing and contributing to the region's growth as a national center for semiconductor innovation.

Through these efforts, UB is playing a crucial role in transforming federally funded research into economic growth and innovation in Western New York, supporting job creation in high-tech sectors and attracting investment to the region.

UNIVERSITY OF ALASKA

SPARKS ECONOMIC GROWTH

The University of Alaska Fairbanks (UAF) played a critical role in creating biotech company Be Cool Pharmaceutics LLC (Be Cool), with initial support from the National Science Foundation's Established Program to Stimulate Competitive Research, which funded workshops on launching companies. The research efforts which ultimately led to Be Cool's creation also secured U.S. Small Business Administration Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants.

ABOUT THE COMPANY

Be Cool is Alaska's first biotech company, specializing in developing innovative thermolytic drugs to suppress shivering and seizures. Founded by Dr. Kelly Drew, a professor at UAF, the company emerged from years of research supported by the National Institutes of Health and the National Science Foundation. Be Cool is at the forefront of drug development, leveraging advancements in neuroscience and thermoregulation for therapeutic applications.

ECONOMIC IMPACT

Since its founding in 2017, Be Cool has sustained employment for 1 to 4 individuals annually and continues to drive innovation in Alaska's growing biotech sector. The company has received significant federal funding, including a $457,306 SBIR grant and a $55,000 National I-Corps grant to advance its technologies. While Be Cool is in the early stages of commercialization, its innovative therapies have the potential to transform emergency medicine and space health, creating ripple effects across multiple industries. By enabling local job creation and advancing Alaska's biotech infrastructure, Be Cool is setting a foundation for long-term economic and scientific growth.

UNIVERSITY OF CALIFORNIA BERKELEY

Berkeley
UNIVERSITY OF CALIFORNIA

SPARKS ECONOMIC GROWTH

ABOUT THE COMPANY

INKSPACE IMAGING

InkSpace Imaging makes comfortable, patient-customized MRI surface receive coils that help MRI operators decrease their costs while increasing patient comfort and the speed of exams. UC Berkeley Electrical Engineering and Computer Sciences Professors Ana Claudia Arias and Michael (Miki) Shimon Lustig, and UC Berkeley PhD student Joseph Corea founded the company in 2017 to commercialize their invention of thin-film, lightweight MRI sensors that can be embedded in swaddles that fit snugly on little patients, making MRI procedures easier and safer for children. InkSpace Imaging's foundational technology was enabled by National Institutes of Health funding, which supported the development of its 3D printing technique for fabricating these advanced MRI coils.

Iota Biosciences, established in 2017, leverages UC Berkeley's groundbreaking "neural dust" technology to create battery-free, implantable bioelectronics. These ultra-miniature devices combine electrodes and piezoelectric crystals, powered wirelessly by ultrasound. Applications include monitoring and treating diseases with devices implanted in the brain or peripheral nerves. The company's foundational technology was developed by UC Berkeley Professor of Electrical Engineering and Computer Science Michel Maharbiz and funded by the National Science Foundation and Defense Advanced Research Projects Agency.

ECONOMIC IMPACT

InkSpace Imaging employs 23 individuals and is poised to reshape diagnostic imaging. In 2024, the company secured a distribution partnership with American Medical Imaging (AMI) and achieved a GE Healthcare certification for its Snuggle and Silhouette MRI body arrays, making them compatible with advanced MRI scanners. These developments mark significant strides toward broader market adoption and improved healthcare outcomes.

Iota Biosciences employs 105 individuals, and its pioneering efforts in bioelectronics are setting new standards in disease surveillance and therapeutic intervention, with significant implications for global healthcare innovation and economic growth. Astella Pharma acquired Iota Biosciences in 2020, accelerating commercialization of the unique implanted bioelectronics devices controlled by ultrasound, with a bladder control device currently in clinical trials.

BIG PICTURE

UC Berkeley's research ecosystem consistently drives innovation, translating federally funded discoveries into transformative technologies and thriving businesses. A 2014 economic impact study found 2,610 companies in operation that were established by UC Berkeley founders. These companies accounted for 542,433 employees and report $317 billion in annual revenues.

UNIVERSITY OF CALIFORNIA SANTA CRUZ

UC SANTA CRUZ

SPARKS ECONOMIC GROWTH

Oxford Nanopore Technologies is a biotechnology company that has revolutionized DNA and RNA sequencing. The company's core technology is based on groundbreaking federally funded research conducted at the University of California, Santa Cruz (UCSC).

ABOUT THE BREAKTHROUGH

Dr. David Deamer and Dr. Mark Akeson, professors at UCSC, along with their colleague Dr. Dan Branton at Harvard, showed that DNA or RNA can be sequenced by pulling the DNA or RNA through a nanometer-sized hole (nanopore) with a charge differential across the hole and measuring the changes in charge as the different bases pass through the hole. A crucial breakthrough came when Dr. Akeson's team developed a system incorporating an enzyme motor adjacent to the nanopore, slowing down nucleic acid transfer to allow accurate base identification. Yet another breakthrough involved performing this sequencing method using an array of nanopores, greatly increasing efficiency.

These nanopore sequencing technologies were licensed by Oxford Nanopore Technologies and led the products like MinION, GridION, and PromethION sequencing systems. These systems make it easier and more affordable for researchers around the world to analyze genetic material, whether they are working in a laboratory, in remote locations, or even in space.

ECONOMIC IMPACT

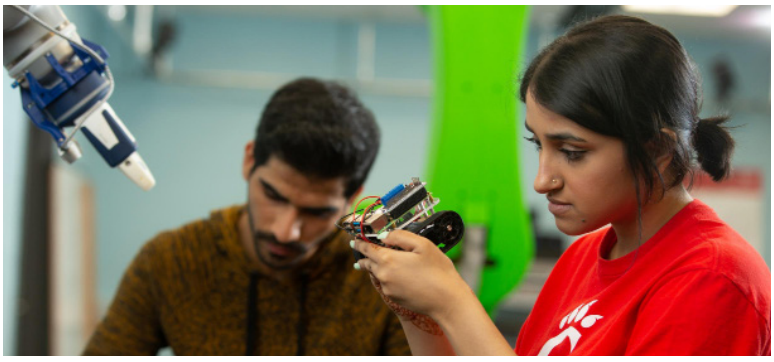
The commercialization of this technology by Oxford Nanopore Technologies has created thousands of jobs across the globe in the biotechnology industry — not just for employees of Oxford Nanopore Technologies, but for individuals in research labs and biotechnology companies who are trained to use and analyze results from the various nanopore instruments. The low cost and high throughput of nanopore sequencing allows companies, universities, and research institutions to spend less on capital expenditures and achieve faster results than previously possible.

BIG PICTURE

In 2024, The University of Cincinnati (UC) and its affiliates achieved a record $740 million in research expenditure, marking a 6% increase from the previous year. The university also received $323 million in research awards in 2024, a 3% increase from the prior year. These figures underscore UC's significant role in driving innovation and economic development through its robust research capabilities.

Federal funding forms a substantial portion of UC's research portfolio. The U.S. Department of Health and Human Services (including the National Institutes of Health) provided $124 million, and the National Science Foundation contributed $21 million to the university. The U.S. Department of Defense awarded $19 million, and the U.S. Department of Education granted UC $14 million. This federal support is crucial in advancing UC's research initiatives across various disciplines.

UC's Venture Lab, located in the 1819 Innovation Hub, has been instrumental in fostering entrepreneurship and driving economic impact. Since its launch in 2018, the Venture Lab has graduated over 330 startup ventures. The university's commitment to innovation is further exemplified by its partnerships with other institutions. UC has formed the first-ever cross-institutional partnership with Cincinnati State University, Wright State University, the University of Dayton, and Xavier University to accelerate startup launches. This collaboration aims to leverage assets and resources across the region, contributing to large-scale economic development.



UC students studying emerging robotics technology.

UNIVERSITY OF COLORADO BOULDER

University of Colorado Boulder

SPARKS ECONOMIC GROWTH

Professor Greg Rieker and his colleagues at the University of Colorado Boulder (CU Boulder) founded LongPath Technologies, Inc. (LongPath) which grew out of federally funded research from an ARPA-E award. They are now partners with the Department of Energy's Loan Programs Office in deploying a nationwide methane emissions monitoring network across major oil and gas production regions, including California, Colorado, New Mexico, North Dakota, Oklahoma, Pennsylvania, Texas, Utah and Wyoming.

ABOUT THE COMPANY

LONGPATH TECHNOLOGIES

LongPath installs and maintains continuous laser line sensors to supply real-time emissions monitoring data and actionable insights for clients. It works with oil and gas operators across the energy landscape and provides expanded services to various markets.

ECONOMIC IMPACT

Federal scientific research funding generates over 150 new technologies annually at CU Boulder — and drives one of the most prolific startup engines at any U.S. university, with 35 spinout companies in fiscal year 2024 alone. From 2018-2022, the commercialization of federally funded innovations from CU Boulder contributed $8 billion to the national economy, according to a study conducted by the Leeds School of Business.

UNIVERSITY OF FLORIDA

SPARKS ECONOMIC GROWTH

The University of Florida sparks economic growth with strong tech transfer programs laying the groundwork for companies like AxoGen, Inc. The company grew out of federally funded scientific research at the university and is now revolutionizing the field of peripheral nerve regeneration.

ABOUT THE COMPANY

AxoGen, Inc. is a regenerative medicine company focused on the science, development, and commercialization of technologies for peripheral nerve regeneration and reconstruction. Founded in 2002 and headquartered in Alachua, FL, AxoGen emerged from research conducted by University of Florida neuroscientist David Muir. A $1.5 million grant from the National Institutes of Health supported the company's initial research and development.

AxoGen has developed patented and patent-pending technologies, including the Avance® Nerve Graft, which has been used on more than 7,000 patients to improve surgical reconstruction and regeneration of peripheral nerves.

ECONOMIC IMPACT

AxoGen's economic impact is significant, with the company reporting revenue of $48.6 million in the third quarter of 2024 and anticipating annual revenue between $182 and $186 million. This financial success underscores the role of federally funded research in driving economic growth. By innovating and expanding into new markets, AxoGen not only enhances its financial performance but also contributes to broader economic growth through job creation and GDP contributions.

BIG PICTURE

The University of Florida's (UF) research capabilities have reached unrivaled levels, with research spending hitting a record $1.26 billion in fiscal year 2024, up from $1.25 billion in the previous year. This growth is largely attributed to a nearly 10% increase in federally funded research. In 2024, federally funded research accounted for nearly 46% of UF's total research expenditures.

This federal funding supports cutting-edge research and contributes significantly to job creation and economic development in the region. The University of Florida has helped launch roughly 300 biomedical and technology companies resulting from university research.

UF is actively involved in developing Gainesville's Innovation District, a strategic initiative aimed at creating a world-class destination for Fortune 500 research companies and establishing a talent pipeline for UF students seeking jobs. This development is expected to further enhance UF's economic impact and solidify its position as a driver of innovation and economic growth in Florida.

UNIVERSITY OF ILLINOIS

ILLINOIS

SPARKS ECONOMIC GROWTH

Several new companies have grown out of federally funded research conducted at the Universtiy of Illinois — including EarthSense, which came from University of Illinois research funded by the National Science Foundation's Small Business Innovation Research Awards and Network Perception, which emerged from University of Illinois research funded by the National Science Foundation and the U.S. Department of Energy.

ABOUT THE COMPANIES

EARTHSENSE
AGRICULTURAL INTELLIGENCE

EarthSense is an innovative agricultural robotics company specializing in AI-powered autonomous solutions. Located in Champaign, Illinois, its technologies — such as the TerraSentia platform — provide farmers with tools for high-throughput field phenotyping, labor efficiency, soil enrichment, and precision farming, all aimed at enhancing productivity while supporting sustainable agriculture.

Network Perception is a cybersecurity company that protects critical infrastructure through advanced network visibility and access-policy verification solutions. Located in Chicago, Illinois, Network Perception's technologies empower security and compliance teams to achieve high levels of cyber resiliency.

Out-of-the-box autonomous, AI-enabled, modular platform for rapid development of robotics product and services for agriculture and off-farm applications.

ECONOMIC IMPACT

EarthSense employs more than 30 employees and is valued at more than $4 million. By addressing critical challenges like labor shortages, soil degradation, and climate change impacts, EarthSense is empowering the agricultural sector to increase profitability and sustainability.

Network Perception's contributions to the regional economy include the creation of more than 30 jobs in cybersecurity and computer engineering, as well as partnerships with public and private institutions to help stimulate the next generation of cybersecurity talent. The company has shown significant potential for growth, as evidenced by its recent acquisition by Dragos, a leader in industrial cybersecurity, in October 2024. As threats to cyber-critical infrastructure continue to evolve, the demand for Network Perception's specialized solutions is likely to increase, positioning the company for continued growth and impact in the cybersecurity sector.

UNIVERSITY OF IOWA

SPARKS ECONOMIC GROWTH

The University of Iowa fosters leading innovation by bridging academia and industry, sparking statewide economic growth through federally funded scientific research initiatives.

ABOUT THE COMPANY

DIGITAL DIAGNOSTICS
AI the right way.

Digital Diagnostics was founded in 2010 by former professor and health care ophthalmologist at the University of Iowa Dr. Michael Abràmoff. The company was created after Abràmoff developed technology designed to detect diabetic retinopathy with the assistance of artificial intelligence, supported by federally funded research. In 2018, Digital Diagnostics received first-of-its-kind approval from the FDA for its LumineticsCore technology, which hopes to provide early detection of diabetic eye complications. Early detection and treatment can reduce the chance of blindness by up to 95% for the nearly 8 million Americans who are affected by diabetic retinopathy. Thanks to the University of Iowa's robust research and technology transfer ecosystem, LumineticsCore has identified thousands of previously undiagnosed cases of diabetic retinopathy.

ECONOMIC IMPACT

Digital Diagnostics has consistently grown since its launch in 2010, securing over $185 million in funding from prominent optometric investors like Optum Ventures. As the pre-eminent leader in AI-based detection for diabetic retinopathy, Digital Diagnostics is poised to lead in an industry with a nearly $9 billion global market cap. With over 60,000 Americans going blind each year from diabetic retinopathy, Digital Diagnostics can reduce the significant burden and cost associated with visual impairment and blindness.

BIG PICTURE

As a premier public research university, the University of Iowa (UI) extends its impact far beyond its campus, driving advancements across diverse fields and significantly bolstering the local economy.

In fiscal year 2024, UI secured $811 million in external funding, including $683 million earmarked for cutting-edge research, public service, and creative discovery. This represents a 22% increase in research funding compared to the previous year, underscoring the university's growing influence in the research landscape. UI has a substantial economic footprint, contributing $8 billion annually to Iowa's economy and supporting 1 out of every 19 jobs in the state. UI's research extends across various domains, including significant strides in space, cancer and neuroscience research.

Notably, industry-supported activities, including clinical trials, rose 17% to $149 million, marking the highest in the institution's history. The National Science Foundation's support of UI research projects also increased by 56% to a record high of $18 million, including a new $1.2 million project to advance the personalization of hearing aids.

Through the University of Iowa Research Foundation (UIRF), UI has established robust economic development infrastructure and plays a pivotal role in translating research into real-world applications. The UIRF works to protect intellectual property and foster partnerships with industry for commercial development.

From groundbreaking research and substantial economic impact to fostering innovation, the University of Iowa continues to cement its position as a vital contributor to the region's innovation ecosystem and a driving force for the state's economic prosperity.

UNIVERSITY OF KANSAS

SPARKS ECONOMIC GROWTH

The University of Kansas fuels economic growth by turning federal funds into industry-leading innovations. Icorium Engineering exemplifies how federally funded research at the University of Kansas strengthens the economy and positions America as a leader in renewable technology.

ABOUT THE COMPANY

ICORIUM
Revolutionizing Reclaim

Icorium Engineering was founded in 2023 by University of Kansas PhD graduate Dr. Kalin Baca and her former teacher, Distinguished Foundation Professor Dr. Mark Shiflett, after they developed technology to separate and recycle refrigerants, based on National Science Foundation-funded research. Due to global warming concerns, refrigerants are being phased out of production — Icorium's technology handles complex refrigerant mixtures, allowing them to be reused and recycled. Their first-of-its-kind separation process is awaiting patent approval.

ECONOMIC IMPACT

Icorium Engineering saw quick growth in 2024, securing over $1 million in pre-seed angel funding, expanding their team to 8 employees. The team successfully demonstrated proof-of-concept for their use of refrigerant recycling through a Phase I grant from the National Science Foundation. In 2025, Startland News, a Kansas City entrepreneur-focused news publication, named Icorium a Top 10 startup to watch. Looking ahead to 2026, Icorium expects to operate a commercial demonstration plant, which would scale their operation to separate more than 1 million pounds of refrigerant mixtures annually.

BIG PICTURE

The University of Kansas' federally funded research initiatives, exemplified by companies like Icorium Engineering, are pivotal in stimulating national economic growth and innovation. With federal funds supporting nearly 70% of its research endeavors, the University of Kansas contributed $1.2 billion to the U.S. economy from 2011 to 2022. Their robust research ecosystem has established 49 active startups, more than half of which remain in Kansas. With the help of federally funded research, the University of Kansas provides America with cutting-edge innovative technology, leading across sectors and into the future.

University of Kentucky

SPARKS ECONOMIC GROWTH

BIG PICTURE

Federally funded research at the University of Kentucky (UK) has a direct and immediate impact on Kentucky's economy. In 2024, 54.1% of UK's research and development was federally funded. UK spent $527.7 million on research and development in fiscal year 2024, and generated more than $937 million in economic activity across the Commonwealth. As a result of UK's investment, 4,712 jobs were supported throughout the state of Kentucky, with 2,376 (50%) of those jobs directly supported by research initiatives.

Federal funding supports UK's cutting-edge research, fostering significant intellectual-property development. In 2024, the university facilitated 162 patent applications, secured 43 issued U.S. patents, and expanded its portfolio to 675 global patent assets. Innovations at UK in 2024 also led to the launch of seven new startups. Kentucky's achievements underscore the critical role federal funding plays in driving innovation, economic growth, and job creation across the Commonwealth and America.

UNIVERSITY OF MARYLAND

SPARKS ECONOMIC GROWTH

Ion Storage Systems is one of the largest U.S. factories for solid-state batteries that grew out of federally funded research to boost the nation's adoption of green technologies.

ABOUT THE COMPANY

Ion Storage Systems develops next-generation solid-state lithium metal batteries that are safer, more energy-dense, and faster-charging, offering a sustainable alternative to traditional lithium-ion technology. Its innovative design improves battery performance while reducing costs and manufacturing complexity. Ion Storage Systems is the first of its kind in the state to produce batteries that charge faster and store more power than lithium-ion batteries. The batteries are 100% recyclable and produce 40% more power than conventional lithium-ion cells currently in consumer electronics and electric vehicles.

Ion+ Better batteries, No compromise

In addition to Gov Moore, the photo also shows: ARPA-E Director Evelyn Wang, Congressman Ivey, & President Pines at an advanced manufacturing and innovation event hosted by ION on Aug 13, 2024.

ECONOMIC IMPACT

Ion Storage Systems has secured over $30 million in federal funding and $40 million in private investment to date. With a recent supply agreement and investment from Saint-Gobain, the company is ready to scale production of its patented solid-state batteries. Ion Storage Systems drives economic growth by advancing clean energy storage technology and creating American manufacturing jobs in Maryland. Its innovations not only support the transition to cleaner energy but also generate green jobs, fostering economic development in local communities.

UNIVERSITY OF MICHIGAN

SPARKS ECONOMIC GROWTH

The University of Michigan fuels economic growth by leveraging federally funded research to pioneer innovation across industries. H3D, Inc. and HistoSonics are prime examples of how academic research leads to job growth, attracts investments, and strengthens America's leadership in next-generation medical and industrial breakthroughs.

ABOUT THE COMPANIES

H3D, Inc. was launched in 2011 by University of Michigan professor Zhong He and three of his former students after they developed a new gamma-ray detector technology supported by funds from the Defense Threat Reduction Agency, as well as the Department of Homeland Security. H3D's innovative technology has been used by the Department of Defense, Federal Bureau of Investigation, Department of Energy, and International Atomic Energy Agency. H3D's gamma-ray sensors are currently used in more than 75% of nuclear power plants across the United States, ensuring that America's power plant workers are ensuring the safety of America's power plant workers.

HISTOSONICS

HistoSonics was founded in 2009 after Professor Zhen Xu, along with a group of researchers at the University of Michigan Schools of Engineering and Medicine, discovered the efficacy of histotripsy, a technique allowing ultrasounds to penetrate and destroy tumors in liver cancer patients. Supported by federal grants from the National Institutes of Health and VA Merit Review, HistoSonics research received FDA approval for its innovation, the Edison Histotripsy System, in 2023. The Edison utilizes histotripsy to provide a non-invasive option for treating patients with liver tumors.

ECONOMIC IMPACT

H3D, Inc. reported lifetime revenue exceeding $80 million as of 2024. H3D employs roughly 40 employees in Ann Arbor, and over half of them are University of Michigan alumni. H3D expects to continue growth, evidenced by it's reception of a three-year Fast Track award by local economic development nonprofit Ann Arbor SPARK, who recognized their impressive revenue growth.

HistoSonics secured over $200 million in funding since launching in 2009, receiving investments from pharmaceutical giants like Johnson & Johnson. They have also created over 100 jobs in the region and and have continued to grow after FDA-approval of the revolutionary Edison system in 2023.

BIG PICTURE

H3D Inc. and HistoSonics showcase how federally funded research can better the lives of everyday Americans. Through their breakthrough discoveries, these companies exemplify the value and impact of the University of Michigan's research initiatives, contributing to job creation, economic growth, lifesaving technology, and America's national defense.

UNIVERSITY OF NEBRASKA

SPARKS ECONOMIC GROWTH

Drone Amplified is a drone company that grew out of federally funded scientific research at the University of Nebraska (NU).

ABOUT THE COMPANY

DroneAmplified

Drone Amplified was founded by a computer science professor at the University of Nebraska with initial research supported by a federal grant from the National Science Foundation. Drone Amplified's technology enables task-focused, integrated, autonomous Unmanned Aerial Vehicles to conduct operations where people cannot safely reach. The primary application of Drone Amplified's IGNIS systems are wildfire prevention and protection for firefighters.

ECONOMIC IMPACT

Drone Amplified products are manufactured in Lincoln, Nebraska and employ graduates of the University of Nebraska. These drones enable faster detection and more efficient firefighting, reducing economic losses from wildfires while lowering operational costs. Their use drives growth in the drone industry, creates jobs, and fosters innovation in technology and workforce skills. Additionally, drones help protect key sectors like agriculture and tourism, safeguard infrastructure, and enhance community resilience, contributing to sustained economic stability and growth.

BIG PICTURE

The presence of the NU system is an essential component of the state and local economies, as tens of thousands of Nebraskans are employed directly or indirectly as a result of the NU system. The NU system supports 52,335 jobs in the state, meaning one of every 20 Nebraskans are employed directly or indirectly by the NU system and affiliates.

UNIVERSITY OF NOTRE DAME

SPARKS ECONOMIC GROWTH

EMNet's smart sensor technology was initially developed at the University of Notre Dame through a grant from the U.S. Department of Defense. Its cutting-edge technology – now used for wastewater system management – can help save taxpayers and municipalities millions of dollars by reducing sewer overflow costs, reducing fines, and optimizing infrastructure.

ABOUT THE COMPANY

EmNet started as a water technology company that enabled municipalities to manage the urban water cycle and monitor wastewater systems. In 2017 it was acquired by Xylem Inc. and is now known by the name Xylem Vue. Xylem Vue helps municipalities manage the urban water cycle and monitor wastewater flows. It works in combined sewer systems where it deploys sensors and smart valves that communicate with one another, make real time decisions, and help minimize combined sewage spills into rivers - which is a nationwide problem that is regulated by the US Environmental Protection Agency.

ECONOMIC IMPACT

In part through the use of smart sewer technology provided by EmNet/Xylem Vue, the City of South Bend (Indiana) successfully redesigned its long-term sewer infrastructure plan, saving an estimated $400+ million.

In Kansas City (Missouri), EmNet/Xylem Vue has helped save the city an estimated $1 billion in sewer infrastructure costs.

More than 700 American cities – many in the Midwest – have combined sewers. The smart wastewater management technology that was developed at Notre Dame – and now run by Xylem Vue – can support sustainable urban development, and attracts investments in cleaner, more resilient communities.

BIG PICTURE

The University of Notre Dame serves as a powerful economic engine for the South Bend-Elkhart region, generating a substantial $3.3 billion in annual economic impact and supporting 21,000 jobs. This contribution is driven by various factors, including the university's extensive research activities, which received $216 million in investments in fiscal year 2023 – with 56% of this funding coming from federal resources. Additionally, the IDEA Center at Notre Dame supports all commercialization and entrepreneurial activities at the university and across the surrounding region. Since 2017, the center's regional startups have collectively raised more than $70 million in investments and a reported $35 million in sales. In FY2024, Notre Dame made 66 invention disclosures, filed 14 new patents, and executed seven new licensing agreements. Industry Labs is Notre Dame's platform for collaboration with regional industry. Since 2019, Industry Labs has collaborated with 81 companies on 247 projects, which are projected to have unlocked $120 million in new revenue, $15 million in new investments, 6,000 people to be trained, and 69 new products. In recent years, more than 25 Notre Dame-affiliated companies in the region have won Small Business Innovation Research awards from several federal agencies – including the Department of Defense, National Science Foundation, and the National Institutes of Health, totaling over $9 million.

UNIVERSITY OF OREGON

SPARKS ECONOMIC GROWTH

The University of Oregon has a rich legacy of innovation stretching back to the university's founding in 1876 and the emergence of Nike in the 1960s. Today, research-based spinouts in fields ranging from education to materials science are bringing new solutions to our ever-changing world. Two recent startups are contributing to the improvement of mental and physical health.

ABOUT THE COMPANIES

Northwest Prevention Science, Inc., headquartered in Eugene, is the exclusive provider of training in The Family Check-Up®, which is an evidence-based intervention model focused on improving the mental health and behavior of children aged 2-17 through supportive parenting and family relationships. The Family Check-Up® originated from research conducted by faculty at the University of Oregon's College of Education and has been developed into a digital health model for wide-scale implementation in schools and community mental health service settings.

Penderia Technologies Inc., founded in 2020, is an orthopedic implant technology startup aiming to use real-time data to better monitor injury and healing progress. The company was established by University of Oregon Department of Bioengineering faculty in collaboration with the University of Oregon Phil and Penny Knight Campus for Accelerating Scientific Impact.

ECONOMIC IMPACT

Northwest Prevention Science, Inc. drives economic growth by improving children's mental health and behavior, reducing long-term costs for healthcare, education, and social services. The Family Check-Up® program strengthens family relationships and creates healthier communities, fostering greater productivity and academic success.

The development, evaluation, and clinical trials of the Family Check-Up® model, which focused on assessing its efficacy, have been funded through federal grants awarded to multiple principal investigators at the University of Oregon. Over the past 20 years, these grants and contracts, primarily from the National Institutes of Health (NIH) and the Department of Education (ED), have amounted to more than $30 million. This research led to the development of the Family Check-Up® Online and the Family Check-Up® in-person delivery systems, which are widely used today across the United States. By offering a scalable digital health model, the company expands access to evidence-based interventions, generating jobs in mental health services and enhancing community resilience.

Penderia Technologies is working on creating implants and sensors to inform rehabilitation therapies that address workforce challenges by helping individuals recover from injuries, remain employed, and fill critical gaps in the labor market. The company received a Phase I grant in 2021 through the NIH's Small Business Innovation Research program. It was recently awarded $1.7 million for Phase II, funding work from August 2024 through July 2026 to further develop these impactful innovations. Taken together, this federal funding supports the advancement of rehabilitation technologies, ensuring individuals receive the care they need to recover and remain active members of society.

BIG PICTURE

The University of Oregon's College of Education is one of the nation's highest ranked programs, boasting a decades-long record of national and international research and development in special education, prevention science, counseling psychology, educational leadership, and school psychology. Faculty have a long tradition of translating research into effective models, methods and measures that improve the lives of students and families across the country. More than 29,000 schools in the U.S. use University of Oregon's College of Education research tools, and 43 commercial education products are currently on the market.

The University of Oregon's Phil and Penny Knight Campus for Accelerating Scientific Impact fosters a dynamic ecosystem for innovation and entrepreneurship, translating groundbreaking federally funded research into impactful companies and transformative technologies. Established just eight years ago, the Knight Campus is making a significant impact on scientific research and economic growth in Oregon by supporting small businesses and establishing itself as a West Coast innovation leader, inspiring regional collaboration in scientific research and catalyzing job creation. Approximately 20 percent of the Knight Campus' funding comes from federal investments, which powers its cutting edge research and development initiatives.

UNIVERSITY OF PENNSYLVANIA

SPARKS ECONOMIC GROWTH

With over $1.1 billion in annual research expenditures and a robust technology transfer program, the University of Pennsylvania (UPenn) sparks economic growth by transforming federally funded research into impactful startups that address critical societal needs and contribute to the regional economy.

ABOUT THE COMPANY

EPIVARIO

EpiVario, a biotech company spun out of UPenn in 2017, develops novel therapeutics for memory-related psychiatric disorders. The company's core technology stems from National Institutes of Health (NIH)-funded research led by Dr. Shelley Berger at UPenn, which discovered the role of a key enzyme, acetyl-CoA synthetase 2 (ACSS2), in memory formation. By targeting ACSS2, EpiVario aims to help patients by reducing the impact of memories associated with addiction and PTSD.

ECONOMIC IMPACT

EpiVario has shown significant progress in attracting investment and advancing its research pipeline. The company raised $717,000 in seed funding by early 2021 and has since secured additional NIH grants totaling over $830,000 for research on various substance use disorders. EpiVario's potential market impact is substantial, given that the conditions it targets affect millions globally - over 16 million people worldwide suffer from opioid use disorder alone. The company's innovative approach could disrupt the current treatment landscape for addiction and PTSD, leading to significant health care cost savings and improved patient outcomes.

BIG PICTURE

The University of Pennsylvania's support for startups like EpiVario exemplifies its broader economic impact. UPenn's technology transfer office has been instrumental in commercializing university research. The university's commitment to innovation has led to the creation of numerous startups. These spinouts contribute to job creation, attract investment to the region, and help establish Philadelphia as a hub for biotechnology and other high-tech industries. EpiVario's success, including its recent acquisition of an ACSS2 inhibitor portfolio and key patents, demonstrates how UPenn's research ecosystem can translate federal funding into tangible economic and societal benefits, reinforcing the university's role as a catalyst for regional economic growth and innovation.

UNIVERSITY OF ROCHESTER

SPARKS ECONOMIC GROWTH

Vaccinex was founded based on antibody platform technology developed at the University of Rochester Medical Center.

ABOUT THE COMPANY

Vaccinex, Inc. is a clinical-stage biotechnology company engaged in the discovery and development of targeted biotherapeutics to treat serious diseases and conditions with unmet medical needs, including neurodegenerative diseases, cancer, and autoimmune disorders. Its lead product candidate, pepinemab, is in clinical development for the treatment of Alzheimer's disease and head and neck, pancreatic, and breast cancer.

ECONOMIC IMPACT

Vaccinex has grown into a public company (Nasdaq: VCNX) with 40 employees, a $6.34 million market cap, and an annual revenue of $570,000. The company is poised to continue driving economic growth by advancing the development of targeted biotherapeutics for serious diseases, such as Alzheimer's disease, cancer, and autoimmune disorders. Through its innovative research and clinical trials, Vaccinex not only improves treatment options but also creates jobs in the biotech sector and stimulates investment in cutting-edge medical technologies.

UNIVERSITY of WASHINGTON

SPARKS ECONOMIC GROWTH

BIG PICTURE

As one of the world's premier research universities, the University of Washington's (UW) impact is felt far beyond Seattle, driving economic growth at the local, state, and national level, while spurring groundbreaking innovations.

In fiscal year 2023, UW secured $1.87 billion in external funding, with $1.52 billion coming from federal funds, more than any other public university in the U.S. The funding proved to be a valuable investment, sparking $2.6 billion in economic impact across Washington State, and sustaining more than 10,000 jobs.

CoMotion, UW's collaborative innovation hub, transforms federally funded research into real-world innovations to drive economic growth. Over the past decade, CoMotion startups have generated more than $8.6 billion in economic impact. In just the last five years, CoMotion has facilitated the creation of 2,014 technology licenses and supported the launch of 52 new startups. Since its inception 36 years ago, CoMotion-affiliated companies have collectively generated an impressive $19.9 billion in economic impact. As of July 2023, 110 active UW spinoffs employ more than 1,071 people, cementing CoMotion and UW's role as a catalyst for entrepreneurship and industry advancement thanks to federal funding.

UNIVERSITY OF WISCONSIN-MADISON

SPARKS ECONOMIC GROWTH

The University of Wisconsin-Madison (UW-Madison) sparks economic growth through its robust research programs, technology transfer initiatives, and successful spin-off companies, exemplified by their leadership in advanced fusion research and application.

ABOUT THE COMPANIES

SHINE Technologies, a pioneering fusion technology company, was founded in 2010 by Dr. Greg Piefer, a University of Wisconsin alumnus and Emeritus Board of Visitors Member. The company grew out of federally funded research conducted at UW-Madison. Unlike other fusion technology companies, SHINE focuses on commercializing fusion technology through a phased approach. Initially, SHINE technologies used neutrons from fusion technology to support aerospace and defense industries, including the U.S. military.

Currently, SHINE is advancing into its second phase by utilizing isotope generators to produce medical isotopes, like lutetium-177 which is used in targeted cancer treatments. Historically, a significant portion of lutetium-177 production relied on materials sourced from Russia; SHINE aims to become the world's first vertically integrated manufacturer of lutetium-177.

ECONOMIC IMPACT

SHINE Technologies is driving economic growth in the Madison area and beyond by creating highly skilled jobs in the burgeoning fusion energy sector, attracting both federal funding and private investment. The company has raised $700 million in capital and employs over 400 people.

SHINE's operations are expected to dominate the emerging lutetium-177 market, with the capacity to produce 100,000 doses per year. Currently, a majority of medical isotopes are produced outside of North America and SHINE is actively working to bolster America's supply chain efficiency and bring medical isotope production to the United States. This strategic move aims to reduce reliance on foreign sources and enhance domestic capabilities in the production of critical medical isotopes.

BIG PICTURE

The University of Wisconsin-Madison plays a crucial role in driving economic growth in the region. According to a 2021 report by NorthStar Analytics, UW-Madison, its affiliated organizations, and related startups contribute $30.8 billion annually to Wisconsin's economy, supporting more than 232,000 jobs and generating $1 billion in state and local taxes.

The university's long-standing commitment to research led to the formation of over 400 new businesses based on UW intellectual-property and the work of faculty, staff, and students. This entrepreneurial ecosystem, exemplified by companies like SHINE Technologies, showcases the university's innovation journey from laboratories to powering communities and driving economic growth across the state.

VIRGINIA COMMONWEALTH UNIVERSITY

SPARKS ECONOMIC GROWTH

Virginia Commonwealth University (VCU) sparks economic growth across Virginia and beyond by developing companies like Perfusion Medical Inc., which spun out of VCU in 2020 and is commercializing an IV drug developed for shock and acute ischemia, and by creating new inventions like Nerve Tape, which was developed by researchers at VCU with the support of federal funding from the National Institutes of Health and the U.S. Department of Defense.

ABOUT THE COMPANIES

PERFUSION MEDICAL

Perfusion Medical is commercializing PM-208, a patent-protected drug addressing acute kidney injury and cardiac bypass dysfunction. It was supported by $19 million in federal funding from the U.S. Department of Defense and the National Institutes of Health. The drug features a simple formulation and mechanism, and a strong pre-clinical safety profile.

NerveTape®
Sutureless Nerve Connector

Developed by Dr. Jonathan Isaacs, professor and chair of VCU's Division of Hand Surgery, Nerve Tape is a groundbreaking biologic wrap designed to simplify and enhance the repair of severed peripheral nerves. It reduces surgical time and lowers costs, while improving the quality of care and it has applications in orthopedic, reconstructive, and other surgeries. Funded by the National Institutes of Health, the product was featured in the 2024 Congressional Budget Justification for the National Institute of Neurological Disorders and Strokev, highlighting it as an example of impactful federally funded research.

ECONOMIC IMPACT

PM-208 could help more than 4 million patients annually in the U.S. with a market potential exceeding $10 billion dollars.

Nerve Tape's development was supported by VCU TechTransfer and Ventures, which secured patents and facilitated its licensing to BioCircuit Technologies. Cleared by the U.S. Food and Drug Administration in 2022, BioCircuit made its first commercial sale of Nerve Tape in April 2024. Its rate of adoption could make Nerve Tape one of VCU's most successful licensing ventures.

WASHINGTON STATE UNIVERSITY

SPARKS ECONOMIC GROWTH

Graduate students at Washington State University (WSU) created ZILA BioWorks SPC through the licensing of federally funded technology. ZILA BioWorks is a group of engineers, scientists, athletes, and community activists passionate about building sustainable materials—whether used on a pair of skis, a wind turbine blade, or airplane wings. ZILA is helping catalyze the transition to low-carbon biomaterials across industries and in the process, reinventing the way our world gets built—and preserving it for future generations.

ABOUT THE COMPANY

ZILA BioWorks creates high-performance, plant-based bio-epoxy resins that provide a sustainable alternative to traditional petroleum-based materials. Their innovative solutions reduce carbon emissions, enhance recyclability, and support the transition to a circular bioeconomy. Their product is unique because they are able to use it across industries from sports and outdoor apparel with customers like Burton, to infrastructure and built environments. The startup was later acquired by a larger company, which then built a bigger facility in a neighboring city and hired employees from WSU.

ECONOMIC IMPACT

This company directly provided jobs and investments into the local economy. Local investments often prioritize sustainability which can create long-term economic benefits and growth. Sustainable practices also lead to resilience. Diverse local economies are better equipped to withstand national economic downturns, as they rely on a variety of sectors and industries instead of relying on a few.

BIG PICTURE

Washington State University works on innovative solutions in emerging industries – such as sportwear and sustainable aviation fuels. With funding and support from the Department of Energy, WSU startups have played a pivotal role in driving economic growth in the Pullman, WA area, and across the United States.

WAYNE STATE UNIVERSITY

SPARKS ECONOMIC GROWTH

Wayne State University (WSU) has established itself as a significant economic driver in Detroit and the surrounding region, with a substantial impact on research, innovation, and job creation.

ABOUT THE COMPANY

Advaita Bioinformatics is a pioneering company in bioinformatics and computational systems biology, founded in 2007 as a spinoff from Wayne State University. The company was established by Dr. Sorin Draghici, a former professor of computer science at Wayne State University and current program director at the National Science Foundation (NSF). Headquartered in Plymouth, Michigan, Advaita specializes in developing advanced software tools for analyzing gene expression data, pathway analysis, and integrating multi-omics data. The company's flagship product, iPathwayGuide, is now an essential tool for researchers, helping them identify mechanisms of action in diseases, potential drug targets, and possible side effects based on genomic data and gene expression experiments.

Advaita's technology is rooted in research conducted at WSU and supported by over $4.5 million in grants from the National Institutes of Health, the NSF, and other agencies. This substantial federal investment was crucial in developing and commercializing Advaita's innovative technologies.

ECONOMIC IMPACT

Advaita Bioinformatics has made significant contributions to the biotech and research sectors, demonstrating impressive growth and economic impact. Advaita's tools have gained widespread adoption, being used by 9 of the top 10 pharmaceutical companies and boasting over 18,000 registered users worldwide. Prestigious institutions such as Harvard, Columbia University Medical Center, and the Karmanos Cancer Institute rely on Advaita's technology for their research endeavors. The company's innovative approach has the potential to generate significant cost savings for research labs, with estimates suggesting that its technology can save over $200,000 per experiment by extracting single-cell level data from less expensive bulk RNA sequencing.

BIG PICTURE

As part of Michigan's University Research Corridor (URC) alongside Michigan State University and the University of Michigan, Wayne State University drives economic growth and innovation through federally funded research, contributing to URC's $23.9 billion economic impact in Michigan in 2023. As of 2024, WSU contributes $2.75 billion in annual economic impact to Michigan and is Detroit's 11th largest employer.

Advaita's success story highlights the importance of federal funding in fostering innovation and economic growth in the biotechnology sector, contributing to Wayne State University's broader mission of driving equitable and lasting prosperity in Detroit and Michigan.

LOOKING AHEAD: A MESSAGE FROM THE SCIENCE COALITION BOARD OF DIRECTORS

Robust and sustainable scientific research funding from the federal government continues to help strengthen American competitiveness around the world, fortify America's leadership in cutting-edge science, and bolster America's economy for generations to come.

These investments help our nation continue to lead the world in artificial intelligence, quantum computing, nuclear fusion, biotechnology, gene editing, and many other notable fields.

Maintaining the federal government's robust investments in scientific research remains a top bipartisan priority. But science cannot afford more appropriations stopgaps and half measures by Congress.

The Science Coalition remains hopeful that in the years ahead, we can continue to fight for critical scientific research funding from the federal government that helps accelerate America's scientific leadership and economic competitiveness for generations to come.