

ARIZONA'S
BIOSCIENCE
ROADMAP

THE LATEST PROGRESS OF THE
BIOSCIENCES
IN ARIZONA



ADVANCING THE BIOSCIENCES AND IMPROVING HEALTH OUTCOMES

Even in uncertain times, stay the course

Arizona's bioscience ecosystem remains dynamic, adaptable and collaborative

DURING THE FIRST decade (2002-2012) of Arizona's Bioscience Roadmap, the state's bio industry emerged as one of the nation's fastest growing.

It took all of us. Legislators, municipal leaders and the broader community recognized that bio-related economic development could diversify the state's economy and expand health care options. Steps they took built on a statewide referendum that voters approved in 2000 that would eventually pump \$1 billion into universities for research.

Research funding, job growth, salaries and the number of bio businesses steadily rose—even during the Great Recession. Positive trends mostly continued into the Roadmap's second decade (2013-2023), with job growth and salaries continuing to make bioscience a bright spot for Arizona's economy.

In 2015, however, NIH funding and bio-related academic R&D spending—two key markers—dipped.

That year's Progress Report reminded us to stay the course. Arizona's research and commercialization engine has been successful because of visionary, highly collaborative leadership. At key junctures and in alignment with Roadmap recommendations, policymakers and partners from public and private sectors strategically invested in research-performing institutions, diversifying the state's economy.

The times call for continued focus on innovation, adaptability and collaboration so Arizona's bioscience industry continues to flourish.

The 2015 dip was a blip. The growth of Arizona's bioscience industry only accelerated, even during the COVID years.

As we release the final Progress Report under this iteration of the Roadmap (look for a new Roadmap in the fall), again there's concern.

Speculation abounds about disrupted programs and fear of cuts to NIH and other research funding. Again, the times call for continued focus on innovation, adaptability and collaboration so Arizona's bioscience industry continues to flourish - improving the quality of Arizonans' lives now and for future generations.

» Making an Impact

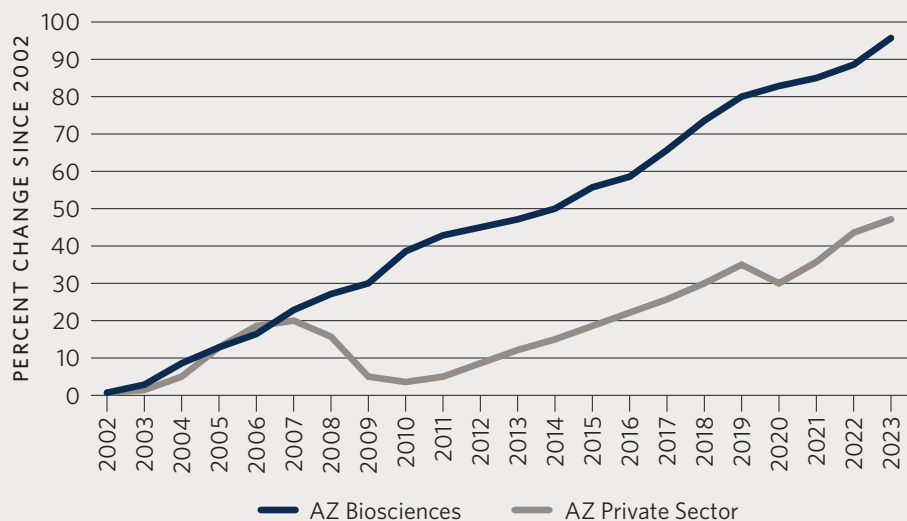
THE LATEST DATA

| | | | |
|--|---|--|--|
|  <p>JOBS</p> |  <p>AVERAGE WAGES</p> |  <p>WAGE GROWTH</p> |  <p>NIH GRANTS</p> |
| <p>+8.1%</p> <p>From 2020-2023, Arizona bioscience jobs grew faster than the +6.7% national rate of change.</p> | <p>30% higher</p> <p>In 2023, bioscience workers annual wages were more than \$20,000 above Arizona's private-sector average.</p> | <p>15%</p> <p>2020-2023 saw strong wage growth for Arizona bio workers—equal to that of the total private sector.</p> | <p>\$368 million</p> <p>Arizona set a new annual record for the top metric of research funding—and grew six times as fast as the U.S. from 2020-2024.</p> |
|  <p>R&D</p> |  <p>VENTURE CAPITAL</p> |  <p>PATENTS</p> |  <p>STARTUPS</p> |
| <p>+30.2%</p> <p>Bio R&D growth at Arizona universities outpaced the nation from 2020-2023 and in 2023 exceeded \$800 million for the first time.</p> | <p>\$289 million</p> <p>VC funding for bio companies in Arizona approached a record high in 2024, though the number of deals fell.</p> | <p>+8%</p> <p>In 2024, Arizona universities received 118 bio-related patents, building on 109 the previous year.</p> | <p>14</p> <p>Arizona's universities spun out more bio firms in 2024 than the year before, but were far short of 2021's high of 27.</p> |

Arizona Employment 2002-2023

Bioscience job growth in Arizona has outpaced the private sector since the Bioscience Roadmap launched in 2002.

Source: TEconomy Partners LLC analysis of Bureau of Labor Statistics, QCEW data from IMPLAN Group LLC



» Prominent Long-Term Investments

Mayo Clinic to invest nearly \$2 billion in Phoenix campus

A \$1.9 billion expansion will add about 1.2 million square feet and create 3,500 jobs while transforming patient care on the hospital campus. In addition, Brooks Rehabilitation of Florida and Mayo Clinic are teaming up to build a 60-bed rehabilitation hospital on the north Phoenix site. The campus is adjacent to Discovery Oasis, Mayo's planned 120-acre collaborative biotechnology corridor.

\$74.5 million grant awarded for Alzheimer's research

Banner Alzheimer's Institutes receives a five-year, \$74.5 million federal grant to continue its study of an extended Colombian family who are predisposed to suffer from early-onset Alzheimer's disease. The grant builds on the original prevention initiative announced in 2012.

ASU Health announces new downtown Phoenix location

The ASU Health headquarters, which will include the new School of Medicine and Advanced Medical Engineering and the School of Technology for Public Health, is scheduled to open in 2028. The medical school, which named Sarah Hollingsworth "Holly" Lisanby as founding dean and HonorHealth as its clinical partner, plans to open in 2026.

An updated Arizona's Bioscience Roadmap coming this fall

The Flinn Foundation commissions a new iteration of Arizona's Bioscience Roadmap—the long-term strategic plan initially launched in 2002—to be unveiled in September 2025. SRI International, an independent nonprofit research institute, will provide updated goals and objectives. The Foundation in 2024 also released a report highlighting the Phoenix region's strengths in precision oncology/medicine, digital health, and translational neurosciences.

» Promote Entrepreneurial Climate

Tech Launch Arizona has record year as ABOR grant promotes bio tech transfer

The University of Arizona's Tech Launch Arizona sets a record in 2024 with 307 new inventions, 78 patents issued, and nine startups launched. The Arizona Board of Regents approves a grant to focus on data collection and analysis at all three state universities as part of a three-year roadmap to amplify the economic impact of tech transfer in life sciences and biomedicine.

Arizona Venture Alliance to elevate startup ecosystem

Arizona Venture Alliance, with its two dozen investors, founders, and economic-development and nonprofit leaders, establishes goals over the next three years to support five unicorns, relocate more than 50 startups to Arizona, and be a catalyst in bringing at least \$500 million in private investment to Arizona startups.

RECENT HIGHLIGHTS

XLR8 PBC welcomes first cohort including Arizona firm

A new Phoenix Bioscience Core health care accelerator for startups welcomes its first cohort of four companies for an 8-day intensive program, including Arizona’s The Patient Company. Also, the new 12-week Tesoro.vc accelerator program, in partnership with the city of Phoenix, the Greater Phoenix Economic Council, and StartupAZ, announces plans to host two cohorts of startups annually.

Rural entrepreneurs make pitches around the state

Flagstaff-based Moonshot’s fifth annual Rural Pitch Tour visits a record 16 cities in 2024—up from 10 a year earlier—across Arizona with the final statewide pitch competition held in Cottonwood for cash prizes. Also in Flagstaff, Northern Arizona University opens the NAU Venture Studio at Cline Library to support entrepreneurs.

What Are the Biosciences?

 Agricultural Feedstock and Industrial Biosciences

 Bioscience-Related Distribution

 Drugs, Pharmaceuticals, and Diagnostics

 Hospitals

 Medical Devices and Equipment

 Research, Testing, and Medical Labs

Arizona Bioscience Week brings together innovators and investors

The annual Arizona Bioscience Week features the biennial White Hat Life Science Investor Conference, where 32 bioscience companies competitively selected for the event make their pitch over two days before local and out-of-state investors.

Statewide programs provide financial benefits, expertise

The Arizona Innovation Challenge, Venture Madness, Venture Café’s Pitch2Tokyo, and Startup World Cup of Arizona are among the competitions that Arizona startups compete in for cash prizes and access to accelerators.

The first two Tech Talent Summit events for startups and investors are held in downtown Phoenix, and the Flinn Foundation’s Bioscience Entrepreneurship and Seed Grants to Promote Translational Research programs provide funding support to early-stage companies and researchers striving toward commercialization. DataBiologics, Metfora, MiiHealth, Anuncia Medical, Macula Vision Systems, Precision Epigenomics, and Rovicare are among the honored companies.

Flinn Foundation rebrands annual conference for entrepreneurs and investors

The Flinn Foundation Bio Capital Conference, “Managing Growth and VC Capital As You Scale,” a project of Arizona’s Bioscience Roadmap Steering Committee, brings together bioscience founders, investors, ecosystem partners, and service providers in March at the Creighton University Health Sciences Campus in Phoenix for a day of learning and networking.

» Build Critical Mass of Companies, Raise Venture Capital

Critical Path Institute celebrates 20th anniversary of advancing drug development

C-Path, which has been leading global collaborations that accelerate drug development from its Tucson headquarters for two decades, launches a clinical trial simulator for Duchenne muscular dystrophy research, creates a task force to improve limb-girdle muscular dystrophies drug development, and awards grants for ALS clinical tests and addressing antibiotic resistance. C-Path adds CND Life Sciences of Scottsdale and Bayer Pharma to its Parkinson’s consortium and publishes results for six biomarkers that could improve the early and accurate detection of kidney injury.

Nectero Medical closes on nearly \$100 million deal

Tempe-based company Nectero Medical receives \$96 million in series D funding to help finance clinical trials of its Nectero Endovascular Aneurysm Stabilization Treatment system, a minimally invasive technology for patients with infrarenal abdominal aortic aneurysms. Solera Health (\$40 million), GT Medical Technologies (\$37 million), Dot Compliance (\$17 million), and Motive Health (\$9 million) are among the companies with venture deals in the past year.

Caris Life Sciences receives FDA approval of MI Cancer Seek

Caris Life Sciences, which has a significant hub in Phoenix, including a blood profiling lab, will use the FDA-approved MI Cancer Seek test as a companion diagnostic to identify adult and pediatric patients who may benefit from multiple cancer therapies.

Nucleus RadioPharma to open Mesa manufacturing facility

Nucleus RadioPharma, which offers clinical and commercial supply chains for targeted radiotherapies to fight cancer, announces plans to open a 53,000-square-foot facility in Mesa in 2026. The Minnesota-based company hopes to significantly improve patient access to life-saving treatments and expedite clinical trials.

Mayo Clinic and ASU MedTech Accelerator welcomes 10 companies

The MedTech Accelerator, now in its sixth cohort, provides mentoring and workshops to early-stage medical device and health care technology companies with physicians, researchers, and entrepreneurs. Arizona-based The Pause.ai and WellBeings join eight other companies in the two-week program.

Five Roadmap Goals:

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1: Form a hub of bioscience entrepreneurs and enterprises across Arizona
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2: Increase the ability of research-performing institutions to turn results into products, treatments
- 
3: Make Arizona a bio-talent powerhouse
- 
4: Promote Arizona’s convergence of research, health care, and commercialization to economic partners in neighboring states, Canada, and Mexico
- 
5: Sustain and enhance the state’s “collaborative gene” reputation

RECENT HIGHLIGHTS

Connect Labs by Wexford adds tenants at 850 PBC

MiiHealth, a London-based digital health company with an AI-based health monitoring system to assist older adults, opens its U.S. headquarters on the fifth floor of the Phoenix Bioscience Core building. About 25 companies make up the 34,500-square-foot space, which includes wet labs and offices.

» Advance Research Base

Alzheimer's researchers find link from herpes infection

Scientists at Arizona State University and Banner Alzheimer's Institutes make a connection between a gut health infection with a common herpes virus and a new subtype of Alzheimer's, potentially impacting nearly half of the people with the disease.

TGen, partners secure \$45 million grant on human aging

The Translational Genomics Research Institute and its Longevity Consortium partners receive a \$45 million grant to integrate results showing the factors that contribute to longer and healthier lives, the fourth major grant to the consortium. TGen also secures an \$8.2 million grant for pulmonary disease research and an NIH grant to fund a new pancreatic cancer treatment study. TGen appoints Aleksandar Sekulic as physician-in-chief.

The Arizona BioMap

Get details on more than 1,200 organizations in Arizona's most comprehensive bioscience directory. Visit flinn.org/biomap.

BNI opens Barrow Neuro Analytics Center, leads brain cancer clinical trial

Barrow Neurological Institute opens a 10,000-square-foot lab at Park Central to conduct research in environmental epidemiology, advanced neuroimaging, and neurological drug development. The Ivy Brain Tumor Center at Barrow Neurological leads a brain cancer clinical trial with the first patient from Arizona. A new BNI study begins to determine the impacts of long COVID-19 on neurological function and a possible new dementia.

NAU earns highest research institute classification

Northern Arizona University receives R1 research activity designation from the Carnegie Foundation. The director of NAU's Biomechanics Laboratory is a co-principal investigator on a \$15 million grant to examine dynamic muscle function of humans and animals with the goal of creating improved physical therapy and rehabilitation programs and devices.

U of A research targets Parkinson's disease

The U of A Health Sciences finds the tiny PNA5 protein appears to have a protective effect on brain cells. The researchers believe this could possibly lead to treatments to prevent cognitive decline in patients with Parkinson's disease or related disorders. Also at UA, Valley Fever Center for Excellence is named the Innovator of the Year academia winner at the Governor's Celebration of Innovation awards, and Dan Theodorescu is appointed director of the University of Arizona Cancer Center.

RECENT HIGHLIGHTS

ASU Biodesign Institute marks 20 years of science and discovery

Since opening in 2004, the ASU Biodesign Institute has produced scientific breakthroughs and innovations, including cancer therapies, groundbreaking Parkinson's and Alzheimer's disease research, studies on genetic inheritance, and advances in regenerative medicine.

ACA, partners award \$4.2 million for WearTech research

Seven projects are included in the most recent WearTech Applied Research Center cohort, funded by the Arizona Commerce Authority and private funds. Among them: a fall detector for senior living facilities, a device to assist with walking rehabilitation, virtual-reality haptic gloves for stroke rehabilitation, a fat-burning monitoring device, and a wearable for cardiorenal metabolic disease management.

» Enhance Hospital Research, Clinical Care

New Valleywise Health hospital replaces 53-year-old building

The 10-story, 673,000-square-foot medical center and public teaching hospital opens in Phoenix featuring the Diane & Bruce Halle Arizona Burn Center, a 34,550-square-foot emergency department, a pediatric wing, research and teaching space, and a hyperbaric chamber.

HonorHealth opens Center for Translational Science lab in downtown Phoenix

HonorHealth Research Institute opens its \$7 million Center for Translational Science lab at Phoenix Bioscience Core to help boost collaboration and advance therapies. The Scottsdale-based health system also takes over operation of several bankrupt Steward Health Care facilities, including St. Luke's Hospital in Tempe, Florence Hospital in Pinal County, and Mountain Vista Medical Center in Mesa.

Banner Health hires new head of research, plans major investments

Banner Health names Corey Casper as its new chief research officer. The health system's future growth includes a north Scottsdale hospital campus featuring a Banner MD Anderson Cancer Center, a Tucson rehab hospital, and expansions to Banner Thunderbird Medical Center in Glendale and Banner Estrella Medical Center in west Phoenix.

Phoenix Children's opens new hospital in West Valley

Phoenix Children's Hospital-Arrowhead Campus in Glendale will treat up to 72,000 patients annually from the new 175,000-square-foot hospital, which includes inpatient care, an emergency department, surgical care, and advanced imaging services. The hospital marks the completion of the broader Arrowhead Campus. Phoenix Children's also announces the retirement of President and CEO Robert Meyer after 22 years of service.

Dig Deeper

Find a comprehensive catalogue of bioscience developments since the Roadmap's 2002 creation at flinn.org/progress.

RECENT HIGHLIGHTS

Northern Arizona Healthcare expanding services, seeking new hospital site

NAH hopes to announce a new proposed location for Flagstaff Medical Center by the end of 2025 with ambulatory services throughout the community. The NAU Health Clinic opens in Flagstaff, including primary care providers, a sleep clinic, and urgent care.

Tucson Medical Center opens hospital in southeast Tucson

The 60-bed Tucson Medical Center Rincon completes its third and final phase of construction. The TMC Health campus features maternity beds and operating rooms, urgent care, outpatient imaging, primary and specialty care, and emergency services.

» Expand STEM Education, Develop Talent

Creighton University nearing capacity in Park Central health building

Creighton University Health Sciences Campus-Phoenix opens the sixth floor of its 200,000-square-foot building in midtown Phoenix that is home to nearly 850 students in its College of Nursing, School of Medicine, School of Pharmacy and Health Professions, and physician assistant program. The university, which owns an adjacent parcel, will reach capacity later this year.

Tucson high school students to train at \$24 million medical career center

Pima JTED's new 50,000-square-foot health and medical career center at the Bridges at U of A's Tech Parks Arizona will train students in a health simulation lab, in the veterinary sciences, and to become licensed nursing and medical assistants, pharmacy technicians, and EMTs.

ASU, Mayo Clinic partner on new health innovation program

The Mayo Clinic and ASU Alliance for Health Care Biomedical Engineering Program will provide education and training opportunities for Mayo Clinic and ASU students to use technological innovations to improve health and enhance their entrepreneurial development with the hope of filing new patents or launching startups.

Onvida Health of Yuma partners with college on career center

Onvida Health—formerly Yuma Regional Medical Center—partners with Arizona Western College to break ground on a new Health Careers Center set for completion in late 2025 that will offer programs in numerous health fields. The Onvida Health Cancer and Blood Disorders Center receives two new Varian TrueBeam Linear accelerator machines that can treat local cancer patients using the latest radiation technology.

Sneak peek at the new Bioscience Roadmap

The Flinn Foundation has commissioned the next iteration of Arizona's Bioscience Roadmap, the longest-running, statewide bioscience strategic plan in the nation.

Originally launched in 2002 and updated in 2014, the Roadmap has driven Arizona's bioscience growth for more than two decades. The newest version will guide Arizona's bioscience sector forward as a rising bioscience leader in a rapidly changing, globally connected bioscience landscape.

Flinn has engaged SRI International, a leading nonprofit research institute, to develop the updated plan. The new Roadmap is grounded in the insights of Arizonans from across the bioscience ecosystem, shaped through statewide engagement and the leadership of Arizona's Bioscience Roadmap Steering Committee.



The updated Roadmap features:

- Actionable strategies that position Arizona for national leadership.
- A framework to track progress on action items, including milestones and metrics.

Among the new priorities:

- Enhancing institutionalized collaboration across sectors to unlock new opportunities.
- Accelerating translational research to solve key scientific, health, and community challenges.
- Nurturing and empowering bioscience entrepreneurs and startups.
- Attracting, developing, and retaining talent that aligns with industry needs and advances sector growth.
- Promoting bioscience's impact on health and economic growth in Arizona and beyond.

For now, we celebrate the wins documented in this progress report. The Foundation anticipates releasing the new Roadmap in September 2025.

Leading our efforts

The leaders of Arizona's Bioscience Roadmap Steering Committee guide us through the end of the current Roadmap in 2025 and into its next iteration. Committee chair is **Heather Carter**, CEO, Health Choice Arizona, Blue Cross Blue Shield of Arizona. Vice chair is **Jennifer Barton**, director of the BIO5 Institute at the University of Arizona.

Working alongside Carter and Barton on the Steering Committee are some 120 executive-level leaders from Arizona's public and private sector in science, health care, business, academia and policy.



Heather Carter
Chair,
Bioscience
Roadmap Steering
Committee



Jennifer Barton
Vice Chair,
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