



Life Sciences

Maryland is a premier location for life sciences companies, across biotechnology, medical devices, pharmaceuticals, as well as biomanufacturing, engineering and professional services sectors. With one of the nation's largest clusters, a community of almost 5,000 life science businesses has unparalleled proximity to leading in-state federal institutions such as the National Institutes of Health (NIH), National Institute of Standards and Technology (NIST), and the Food and Drug Administration (FDA). The state is a major recipient of NIH research and development dollars, and Johns Hopkins University is first in the nation in total NIH awards. The state's life sciences establishments support a workforce of nearly 54,000 employees, generate \$41.9 billion in economic activity, and are awarded over two billion dollars in federal contracts annually.

Major Life Sciences Employers in Maryland

Employer	Employment	Product / Service
National Institutes of Health	18,000	HQ / Medical research
U.S. Food and Drug Administration	13,000	HQ / Food and drug R&D and standards
Naval Support Activity Bethesda	12,000	Medical services
AstraZeneca	4,500	BioTech Manufacturing
National Institute of Standards and Technology	2,700	HQ / Testing and standards; R&D
W. L. Gore & Associates	2,400	GORE-TEX® medical products / R&D
BD Life Sciences - Diagnostic Systems	1,900	Microbiology, medical and diagnostic equipment
U.S. Pharmacopeial (USP)	1,500	HQ / Pharmaceuticals standards
Novavax, Inc.	1,200	HQ / Biopharma R&D
Thermo Fisher Scientific	950	Life sciences research
GlaxoSmithKline	900	Research and Development in Biotechnology
MilliporeSigma	800	HQ / Biopharma manufacturing
Quest Diagnostics	775	Diagnostic laboratories
Terumo Medical Products	725	Medical products / R&D
Medline Industries Inc	625	Medical products distribution
Substance Abuse & Mental Health Services Administration (SAMHSA)	600	HQ / Medical research
Meso Scale Discovery	500	Pharmaceutical Preparation Manufacturing
Lonza Walkersville	475	HQ / Biological products manufacturing

Note: Employment counts are rounded.

Source: Maryland Department of Commerce, NIH, FDA, NSA Bethesda, Econovue, SAMHSA.gov, CoStar

Selected Rankings

- Maryland has the fifth-highest concentration of employed doctoral scientists and engineers with fifth place rankings for total PhD scientists, as well as fifth in PhDs in biological sciences and health.
- Johns Hopkins University ranks first among U.S. colleges and universities in total NIH awards, including grants and contracts for research, development, training, and fellowships.
- According to the U.S. News Best Colleges survey, Johns Hopkins University holds the following rankings:
 - First in both undergraduate and graduate biomedical engineering

- First in graduate nursing with top five rankings in multiple specialties.
- Third among top research medical schools, with top five rankings in multiple specialties.
- Sixth in graduate biology, with top five rankings in cell biology, molecular biology, and neuroscience
- The University of Maryland, Baltimore holds the following rankings:
 - 20th nationally in graduate nursing, with top ten rankings in clinical nurse leader, adult acute care nurse practitioner family, nursing administration, and 8th in doctorate of nursing practice
 - 22nd in nursing-anesthesia
 - 15th in graduate pharmacy
- The Maryland/Virginia/Washington DC BioHealth Capital Region places third in a ranking of the top ten U.S. biopharma clusters based on patents, NIH grant funding, venture capital, lab space and number of jobs.

Industry Snapshot – Life Sciences in Maryland

- Employment (2023) – 53,668 jobs
 - Leading subsectors:
 - Research, Testing, and Medical Laboratories – 38,554 jobs
 - Pharmaceutical and Medicine Manufacturing – 10,761 jobs
 - Medical Device Manufacturing – 3,781 jobs
- Business establishments (2023) – 4,992
- Total wages (2023) – \$7.3 billion
- Average salary (2023) – \$136,074
- Gross state product (2023) – \$41.9 billion
- Federal procurement (FY2023) – \$2.6 billion

Sources: Maryland Department of Labor; U.S. Bureau of Economic Analysis; U.S. Census Bureau; USASpending.gov.

Employment by Occupation

Maryland Employment – May 2023

Selected Occupations	Employment	Location Quotient*	
		Index	Rank
Biochemists and Biophysicists	850	1.45	7
Biological Scientists, All Other	5,940	5.51	1
Biological Technicians	3,630	2.67	4
Bioengineers and Biomedical Engineers	470	1.39	9
Chemists	3,150	2.14	7
Clinical Laboratory Technologists and Technicians	6,960	1.18	13
Computer Programmers	2,980	1.41	9
Electrical Engineers	3,950	1.21	14
Epidemiologists	450	2.5	3
Life Scientists, All Other	600	4.54	1
Medical Scientists, Except Epidemiologists	6,030	2.5	2
Microbiologists	1,970	5.18	1
Physical Scientists, All Other	2,190	5.95	2

* Location Quotient indicates concentration of the occupation in Maryland, with national average equal to 1.0. Rank indicates Maryland's rank among the 50 states.

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics.

Assets & Resources

- BioHealth Innovation – Private-public partnership acting as a regional innovation intermediary facilitating technology transfer of research in federal labs, universities, and biohealth companies.
- BioHub Maryland – Workforce development and training program for careers in biomanufacturing as well as capital funding support
- Centers for Medicare and Medicaid Services (CMS) – Headquarters for federal efforts to improve access to health care for senior citizens and low-income citizens, with nearly 4,000 employees
- National Institutes of Health – Headquarters for federal biomedical and health-related research, with almost 18,000 employees in Bethesda, Rockville, Frederick, and Baltimore.
- Food and Drug Administration – Headquarters for federal food and drug regulation, with approximately 13,000 employees in Maryland.
- Institute for Bioscience and Biotechnology Research – Joint research enterprise to enhance collaboration among University System of Maryland institutions and NIST.
- Battelle Eastern Science and Technology Center – Non-profit research center in Harford County devoted to biological and chemical sciences and technology research.
- J. Craig Venter Institute – Non profit, leading genomics research institute located in Rockville.
- Connected DMV Global Pandemic Prevention and Biodefense Center – Non-profit organization focused on improving pandemic preparation and response with a focus on monoclonal antibodies.
- Walter Reed National Military Medical Center – Medical research and health care for the uniformed services.
- U.S. Army Medical Research Institute of Infectious Diseases – The Army’s main institution and facility for infectious disease research that may have defensive applications against biological warfare.
- National Biodefense Analysis and Countermeasures Center – Federally funded R&D center for laboratory-based threat assessment and bioforensics.
- Science + Technology Park at Johns Hopkins – Research and biotechnology park adjacent to the Johns Hopkins Medical Campus in East Baltimore.
- Johns Hopkins University Applied Physics Lab – Non-profit university-affiliated research center that supports national defense and security, with focus areas including health, sea, land, air, space, and cyber.
- Fischcell Institute for Biomedical Devices at the University of Maryland – University-based institute focused on developing and launching new biomedical devices for improved patient care.
- University of Maryland BioPark – University-associated research park in downtown Baltimore that accelerates biotechnology commercialization and is undergoing major expansion.

New & Expanding Businesses

- Lonza Walkersville (Frederick County) – Large Swiss biopharmaceutical contract development and manufacturing services provider is constructing a world-class endotoxin assay production line, renovating approximately 18,000 square feet of unused space to meet current and anticipated future global market needs.
- Theradapitive (Frederick County) – Leader in protein-engineering technology is quadrupling its operational space from 6,000 square feet to approximately 28,000 square feet. The company, established in 2017, has 33 employees, and expects to add about 50 more jobs in coming years.

- Clasp Therapeutics (Montgomery County) – Cancer immunotherapeutics platform technology start-up is establishing biomanufacturing and office operations in Rockville following a \$150 million Series A investment round. The company is spun-out of the Johns Hopkins laboratory of Bert Vogelstein, which has also produced Haystack Oncology, PGDx and Thrive Earlier Detection, each of which were acquired for over \$350 million apiece.
- AstraZeneca (Montgomery County) – United Kingdom-headquartered biopharmaceutical giant is investing \$300 million in a state-of-the-art cancer cell therapy development and manufacturing site in Rockville. The 84,000 square foot facility, projected to be operational in 2026, is expected to increase by 150 the 4,500 workers currently employed by the company throughout the state.
- MiliporeSigma (Montgomery County) – Drug safety testing company, part of Merck KGaA, opened its new six-floor, 250,000 square foot, \$286 million building that increases its capacity and consolidates its offices in Montgomery County. It plans on employing 500 new workers by 2027.
- Miltenyi Biotec (Montgomery County) – German cell and gene therapy products and services company is expanding its North American headquarters in Gaithersburg, increasing employment from 340 Maryland workers by 150 by the end of 2027.
- Kite Pharma (Frederick County) – California-based cancer immunotherapies company received U.S. Food and Drug Administration approval in 2022 for commercial production at its new 275,000 square foot facility in Urbana. It is adding an adjacent 70,000 square foot warehouse that will bring an additional 100 jobs to the area, with the company expecting to employ more than 500 full-time staff between its two Maryland facilities by the end of 2026.
- Aphenia Pharma Solutions (Talbot County) – Pharmaceutical manufacturing and packaging services company has nearly tripled in employment and facility size at its unit in Easton, growing from 130 to 300 workers and 54,000 to 184,000 square feet from 2019 to 2022.
- Autonomous Therapeutics, Inc. (Montgomery County) – An antiviral drug company has moved its headquarters from New York City to Rockville. It had planned on expanding its staff from 15 to more than 50 from 2020 to 2023.
- QIAGEN (Montgomery & Frederick Counties) – Leading global provider of molecular sample and assay technologies, with United States headquarters and multiple other units in Germantown, is expanding its next-generation gene sequencing capabilities at its facility in Frederick. Growth is anticipated to push the number of employees across the state to over 400.
- UNDBIO (Montgomery County) - South Korean pharmaceutical company has opened its U.S. R&D headquarters in Rockville, MD. The company has committed \$100 million to begin research and development of its insulin production.

Programs & Incentives

- Maryland Biotechnology Investment Incentive Tax Credit – Refundable income tax credits equal to 33 percent of an eligible investment for investors in qualified Maryland biotechnology companies, up to \$250,000; in certain counties, the credits may be claimed for 50 percent of an eligible investment up to \$500,000.
- Maryland Global Gateway Soft Landing Program – Program for international companies to test out the US market in an affordable and supportive manner.
- Research & Development Tax Credit – Refunds 10% of eligible R&D expenses accrued in state, up to \$250,000.

- Maryland Technology Development Corporation (TEDCO) – Facilitates technology transfer from academic and federal labs into the private sector with funding, technical assistance, connections and entrepreneurial support programs. Funding from TEDCO falls into four broad categories:
 - Social impact funds
 - Seed Funds
 - Venture funds
 - Tech transfer
- Maryland Economic Development Corporation (MEDCO) – Instrumentality of the State of Maryland that serves as a statewide economic development engine through real estate development, bond issuance powers, and the ability to create broad financing capabilities.

Contact for assistance:

Stefanie Trop, PhD

Director, Life Sciences

stefanie.trop@maryland.gov