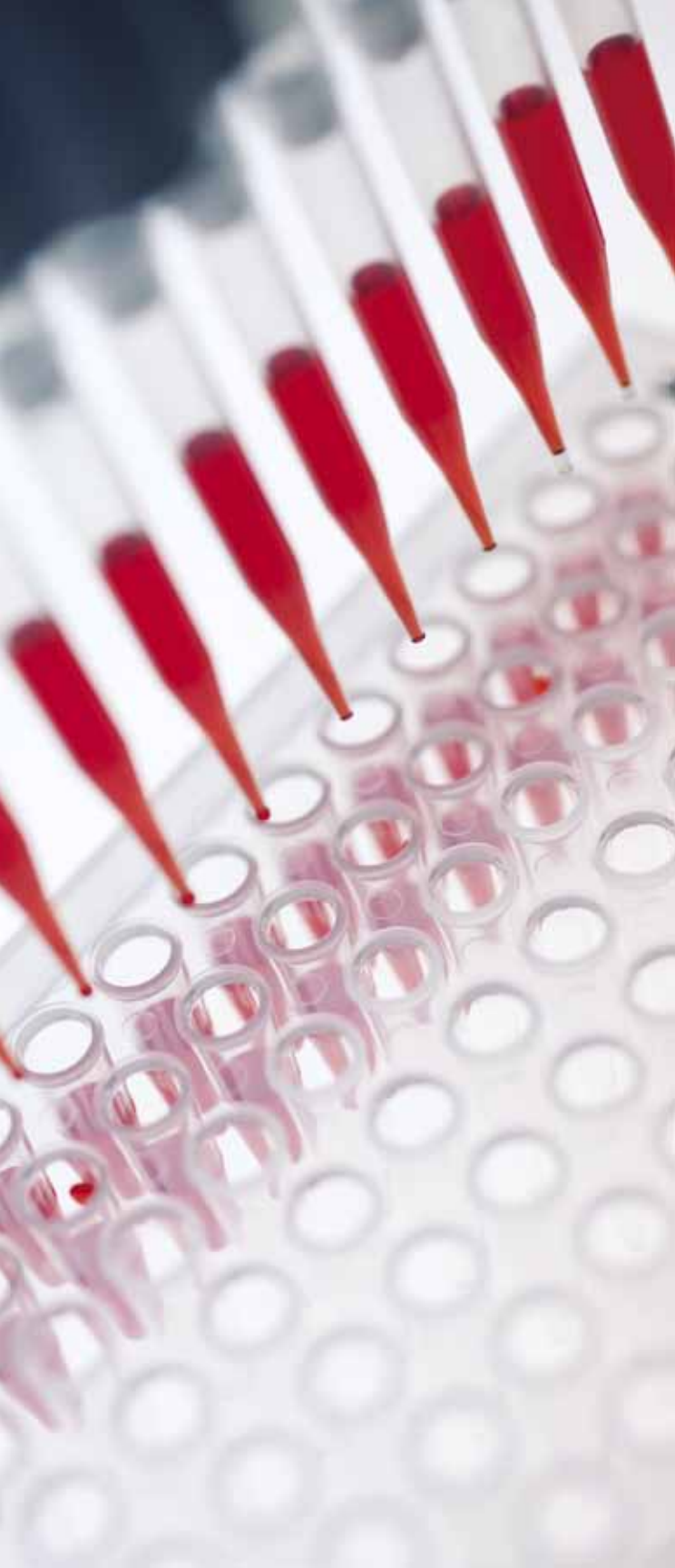




# BUSINESS IN MARYLAND

HEALTH & LIFE SCIENCES

MARYLAND  
BUSINESS



# PROFILE



Maryland is a premier location for life sciences companies. With one of the nation's largest clusters, a community of more than 400 life science businesses have unparalleled access to leading federal institutions such as the **National Institutes of Health, National Institute of Standards and Technology** and the **Food and Drug Administration**. Over 90 percent of the bioscience companies and strategic partners are located within an hour's drive of one another. Companies can also take advantage of two-hour access to 80 percent of the U.S. pharmaceutical industry and more than 2,000 biotechnology companies.

Maryland's health care value chain includes medical diagnostics and device development and 50 acute care hospitals including world-renowned **Johns Hopkins Hospital**. In 2009, the state's 13,600 health and life sciences businesses generated \$32.6 billion in Gross Domestic Product.



## WORKFORCE

1st in concentration  
of doctoral scientists  
and engineers

### TOP TEN HEALTH EMPLOYERS

Johns Hopkins Hospital & Health System	18,370
National Institutes of Health	17,840
MedStar Health	14,810
University of Maryland Medical System	14,800
Adventist Health Care	6,910
LifeBridge Health	6,850
National Naval Medical Center at Bethesda	6,790
GBMC HealthCare	3,330
Washington County Health System	3,050
Peninsula Regional Medical Center	3,000
Quest Diagnostics	3,000

### TOP TEN BIOSCIENCE EMPLOYERS

MedImmune	1,900
Westat	1,900
SAIC Life Sciences	1,670
BD Diagnostics	1,600
Human Genome Sciences	850
QIAGEN	590
U.S. Pharmacopeia	470
Otsuka America Pharmaceutical	450
BioReliance	450
Lonza Walkersville	400

## MARYLAND'S WORKFORCE PIPELINE

Maryland's workforce pipeline is fueled by the highest concentration of PhDs working in health, biological and mathematical sciences. Among states Maryland is:

- 1st in microbiologists
- 2nd in medical and health services managers
- 3rd in chemists
- 4th in psychologists
- 5th in life, physical and social science technicians

**Maryland ranks second in active physicians per capita, with 23,680 doctors statewide.**

## LEADERS AND INNOVATORS

Maryland's health and life sciences industry is diverse and comprises cutting-edge biopharmaceutical discovery, research tools development, medical diagnostics and device development, contract research and manufacturing organizations.

- **Aeras Global TB Vaccine Foundation**
- **Advanced BioScience Laboratories**
- **Coventry Health Care**
- **Emergent BioSolutions**
- **GlycoMimetics**
- **Human Genome Sciences**
- **Life Technologies**
- **Martek Biosciences**
- **MacroGenics**
- **MedImmune**
- **Medline Industries**
- **Qiagen**
- **Terumo**
- **United Therapeutics**



## BIOMARYLAND 2020

The BioMaryland 2020 Initiative, a \$1.3 billion investment in Maryland's life sciences industry over 10 years, is the largest per capita investment made by any state in the nation. The Maryland Biotechnology Center, a key provision of BioMaryland 2020, serves as a catalyst and central resource and offers programs that include business and workforce training and development and federal networking. The Center provides investments in talent, infrastructure and future commercialization opportunities through its grant programs. For information visit [marylandbiocenter.org](http://marylandbiocenter.org).

## THOUGHT LEADERS

- **Dr. Ben Carson**, Director of Pediatric Neurosurgery at Johns Hopkins Hospital and co-director of the Johns Hopkins Craniofacial Center. Specializations in pediatric neurosurgery and trigeminal neuralgia. 2008 Presidential Medal of Freedom.
- **Dr. Carol Greider**, Director of Molecular Biology and Genetics at the Johns Hopkins Institute for Basic Biomedical Sciences, co-discoverer of telomerase, a key enzyme involved in cancer and aging. 2009 Nobel Prize in Medicine.
- **Ellen Yankellow**, Pharm. D. founder and CEO of Correct Rx Pharmacy Services, Inc., one of Maryland's largest female-owned companies and a national leader in institutional and senior care markets.
- **Dr. Claire M. Fraser-Liggett**, Director of the Institute for Genome Sciences at the University of Maryland BioPark. Major research projects include the human genome project and genomic sequencing of anthrax and the common cold bacteria.





## LOCATION

Access to 400  
research centers and 50  
federal agencies

## RESEARCH

Maryland ranks second in federal obligations for research and development (\$12.5 billion) and is home to approximately 8 percent of the U.S. bioscience industry.

The state has nearly 50 federal life sciences institutes and centers. In 2009, University of Maryland campuses topped \$1 billion in research funding. World-renowned federal and private research institutions:

- **Battelle Eastern Science and Technology Center**
- **Biomedical Research Institute**
- **J. Craig Venter Institute**
- **National Biodefense Analysis and Countermeasures Center**
- **National Institutes of Health**
- **National Institute of Standards and Technology**
- **U.S. Army Medical Research Institute of Infectious Diseases**
- **U.S. Food and Drug Administration**
- **Walter Reed Army Medical Center**

**TRENDS IN HEALTH | MEDASSURANT, KAISER PERMANENTE INFORMATION TECHNOLOGY and CONSUMER HEALTH ADVISERS** are just a few of Maryland's leaders in Healthcare Information Technology, a \$100 billion business worldwide. Information technology applications will reshape clinical services, hospital administration and the way consumers understand their health plans.





## EDUCATION

Best public school  
system in the nation  
2nd straight year

## EDUCATION

Maryland's higher education institutions have approximately 1/3 of their enrollment, or 100,000 students, in degree programs that directly feed the bioscience industry.

- **Johns Hopkins University** is a world leader in teaching and research ranking first in graduate and undergraduate biomedical engineering and first in total National Institutes of Health awards, including grants and contracts for research, development, training and fellowships (\$607 million).
- **University of Maryland Baltimore** is the state's public academic health and law university devoted to professional and graduate education, research, patient care, and public service. Seven professional and graduate schools train the majority of the state's physicians, nurses, dentists, lawyers, social workers, and pharmacists.
- **University of Maryland Baltimore County (UMBC)** is a public research university and has the second highest percentage of graduates in STEM fields of any university in the state. Nearly 50 organizations in the bwtech@UMBC Research and Technology Park employ more than 1,000 people and each year generate over \$100 million in income.
- **University of Maryland College Park** is ranked among the nation's top 20 public research universities by *U.S. News & World Report*, with 30 academic programs in the top 10. The faculty includes three Nobel Laureates, seven Pulitzer Prize winners, and scores of Fulbright scholars. The university boasts national centers for nano science and engineering.



## DID YOU KNOW?



For 19 years in a row **Johns Hopkins Hospital** ranked first in the *U.S. News* honor roll of best hospitals in the nation, demonstrating outstanding competence in 15 specialties



Maryland is home to the nation's first **Shock Trauma Center** in the **University of Maryland Medical Center**



The **National Cancer Institute** is the largest organization dedicated solely to cancer and conducts 1,300 clinical trials a year serving 200,000 patients



The healthcare industry in Maryland employs nearly 276,000 people – 11 percent of the state's employment



Maryland bioscience companies employ approximately 30,000 skilled workers with a similar number of bioscience related workers in federal and academic sectors



Maryland has been ranked 2nd globally for initiatives aimed at drawing and retaining biotech companies



About 10 percent of the **National Institutes of Health's (NIH)** budget supports projects conducted by nearly 6,000 scientists in its own laboratories, most of which are on the NIH campus in Bethesda, Maryland



Maryland ranks second nationally in the Milken Institute's State Biopharmaceutical Innovation Pipeline Index





## INFRASTRUCTURE

BWI

Best mid-size airport  
in the world

## INFRASTRUCTURE

Centrally located along the U.S. east coast, offering proximity to New York, Philadelphia and Washington, Maryland's robust transportation infrastructure provides immediate access to major distribution and travel routes.

- Three international airports within an hour's drive
  - Baltimore-Washington International Thurgood Marshall Airport
  - Dulles International Airport
  - Reagan National Airport
- Two Class I freight rail carriers, CSX and Norfolk Southern, and five short lines
- A deep-water, inland port that handles nearly 50 million tons of cargo annually
- Six interstate highways that link the state to every major U.S. market
- Overnight trucking access to one-third of the U.S. population

## HEALTH AND LIFE SCIENCE INCUBATORS

Businesses benefit from numerous statewide technology councils, more than two dozen technology incubators and several research parks that have relationships with major universities including the **Bioinnovation Center** at the **University of Maryland BioPark** and the **Johns Hopkins University – Shady Grove Life Sciences Center**. The network of support promotes advanced technology collaboration, innovation and commercialization via shared resources, technology transfer, funding options, advocacy initiatives and opportunities for continued education and training. For a complete listing of incubators go to [choosemaryland.org](http://choosemaryland.org).



## STABILITY

AAA Bond Rating  
certified by Moody's, Fitch  
and Standard & Poor's

## INCENTIVES

Maryland has a wide array of incentives, including workforce training grants, loans and twenty-eight Enterprise Zones that provide income and real property tax credits in return for job creation and investments.



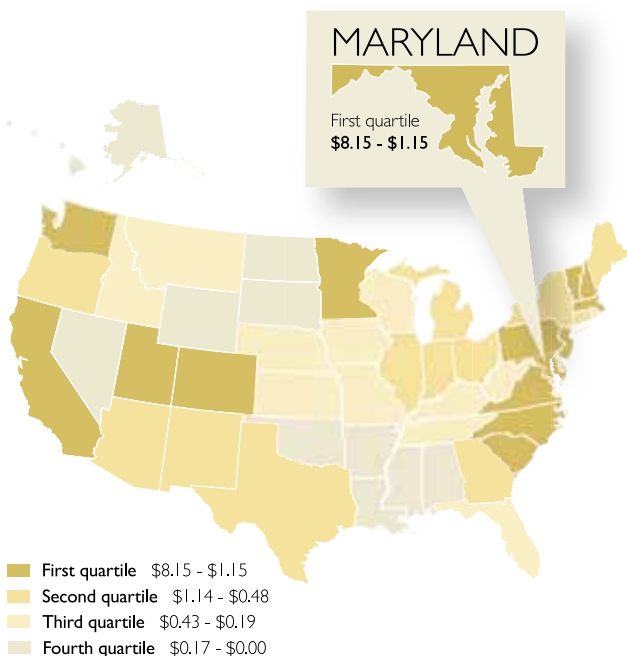
Since the inception of Maryland's Biotech Tax Credit Program in 2006, the state has invested \$18 million, leveraging more than \$36 million in private investment and assisting more than 40 companies in the state's biotechnology community.

**Maryland Biotechnology Investment Incentive Tax Credit** – Provides income tax credits equal to 50 percent of an eligible investment for investors in qualified Maryland biotechnology companies. This tax credit program offers incentives for investment in seed and early-stage biotech companies, up to \$250,000.

**Maryland Venture Fund** – State-funded seed and early-stage equity fund that makes direct investments in technology and indirect investments in venture capital funds.

- **Challenge Investment Program** – Provides financing for seed-stage companies to cover a portion of the initial costs associated with bringing new products to market. Maximum investment of \$150,000.
  - No more than 25 employees and annual sales of less than \$1 million
  - Minimum 1:1 co-investor match
  - Located in Maryland and remain in the state for 3 years
- **Enterprise Investment Fund Program** – Makes direct equity investments in emerging technology companies. Investment ranges from \$150,000 to \$500,000.
  - Applicant must agree to maintain principal place of business in Maryland for 5 years
  - Minimum 3:1 co-investor match

## TOP 25% VENTURE CAPITAL INVESTMENT IN U.S.



Venture capital disbursed per \$1000 of Gross Domestic Product

Sources: PricewaterhouseCoopers, Venture Economics, and National Venture Capital Association, MoneyTree Survey™, special tabulations; and Bureau of Economic Analysis, Gross Domestic Product data. 2008

**Maryland Technology Development Corporation (TEDCO)** – is a Maryland Proof of Concept Center that moves innovations and capabilities of academic and federal labs into the state's economy by facilitating the transfer of technology between the private sector and the labs. This is accomplished in part by providing emerging technology companies and university researchers with vital seed funding, specialized technical assistance, and entrepreneurial support programs. For additional information visit [www.marylandtedco.org](http://www.marylandtedco.org).

- **TechStart** – Funds university or federal lab-based teams to determine whether technologies have the potential to be commercialized through a startup company. Proposals are capped at \$15,000 per technology.
- **Maryland Technology Transfer and Commercialization Fund** – Provides funding for Maryland companies that wish to develop technology-based products and/or services in collaboration with the universities and/or federal labs in Maryland. Funds up to \$75,000 are available.
- **TEDCO / Johnson & Johnson Joint Investment Program** – Jointly funded award program invests in seed-stage companies with technologies of interest to Johnson & Johnson's Corporate Office of Science and Technology. Award limits vary from \$75,000 - \$100,000.
- **University Technology Development Fund (UTDF)** – Funding to Maryland academic institutions to support pre-commercial research on university intellectual property to increase the likelihood of commercialization. UTDF grants are usually limited to \$50,000.
- **Working Capital Loan Fund** provides loans to early-stage technology-oriented companies located in the State of Maryland. Loans of between \$15,000 and \$50,000 are available to be used for working capital in order to assist a company with expansion, market entry, or other short term cash flow issues.
- **Various federal technology transfer initiatives** – Grants for technology collaborations that meet the mission needs of a federal lab or institution. Check with TEDCO on a regular basis. Maximum awards vary.



## MARYLAND DEPARTMENT OF BUSINESS & ECONOMIC DEVELOPMENT

Looking to start, expand or relocate a business? Our staff helps business owners of all sizes and sectors leverage resources, forge relationships and access industry specialists. The Department is your resource for economic, labor and license information and financial incentives.

Services include:

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- Finance programs, tax credits and training grants
- Business advocacy and consulting
- Technology transfer
- Foreign direct investment
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- Tradeshow and conference partnership

Visit [choosemaryland.org](http://choosemaryland.org) for:

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