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STATE OF INNOVATION

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# LIFE SCIENCES IN PENNSYLVANIA

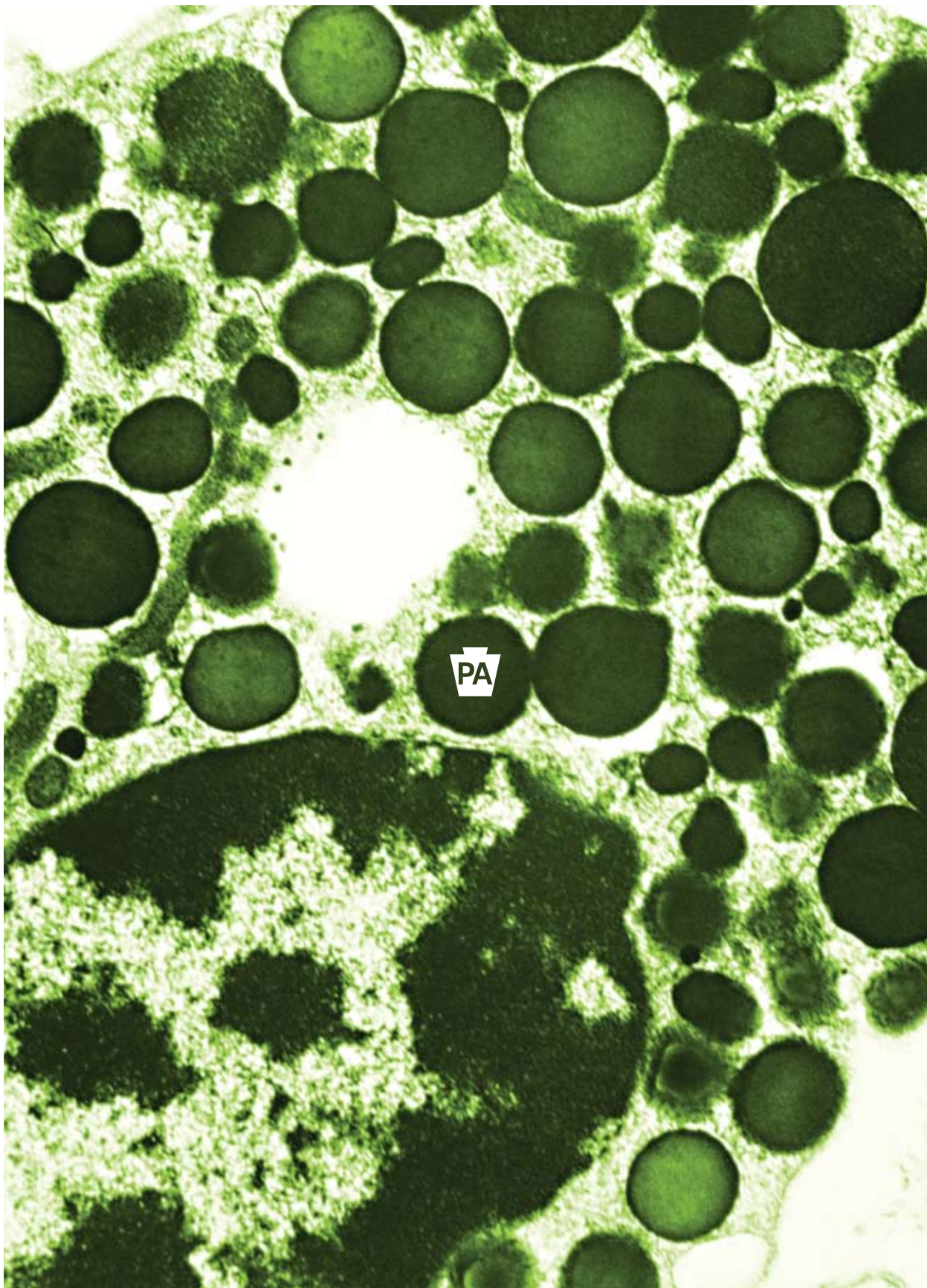
> ready > set > succeed

Department of Community and Economic Development

Edward G. Rendell, Governor

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Harrisburg, Pennsylvania 17120-0225





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# LIFE SCIENCE COMPANIES SUCCEED IN PENNSYLVANIA

Delivering the funding, access and expertise to help you succeed, Pennsylvania is the only state to dedicate 100 percent of all tobacco settlement funds to health-related programs, making a multi-year commitment of \$2 billion to the life sciences.

Some of the most dynamic companies and talented researchers in the world are working in Pennsylvania to discover new therapies, medical devices, diagnostic tests and vaccines to help people live better lives. This vibrant community is fueled by the individual commitment of our researchers, entrepreneurs, company executives and policy leaders who support the growth and success of the life sciences. The spirit of collaboration among these innovators is creating an environment where ideas lead to scientific breakthroughs. Pennsylvania's environment is cultivating companies that develop and produce the therapies that improve millions of lives globally.



## PENNSYLVANIA ADVANTAGES

### Location >

The only state with 10 major research institutions, including 2 in the nation's top 10

In the heart of the bio-pharma corridor, providing access to a skilled workforce and partners

Many of the world's largest pharmaceutical companies have a significant presence in Pennsylvania

Located between New York City, the world's financial center, and Washington, DC, the U.S. regulatory center

Easy access to international airports and interstate highways

### Environment >

A critical mass of life sciences companies from early stage to global

Competitive cost of doing business

Stable real estate rates that allow companies to plan for growth

Strong heritage of innovation

High quality of life

Mix of urban, suburban and rural communities, all within close proximity

Excellent schools, arts and culture, and outdoor activities

### Resources >

Delivering the funding, access and expertise to help you succeed

World-class academic/research institutions: \$1.4 billion in NIH funding in 2007

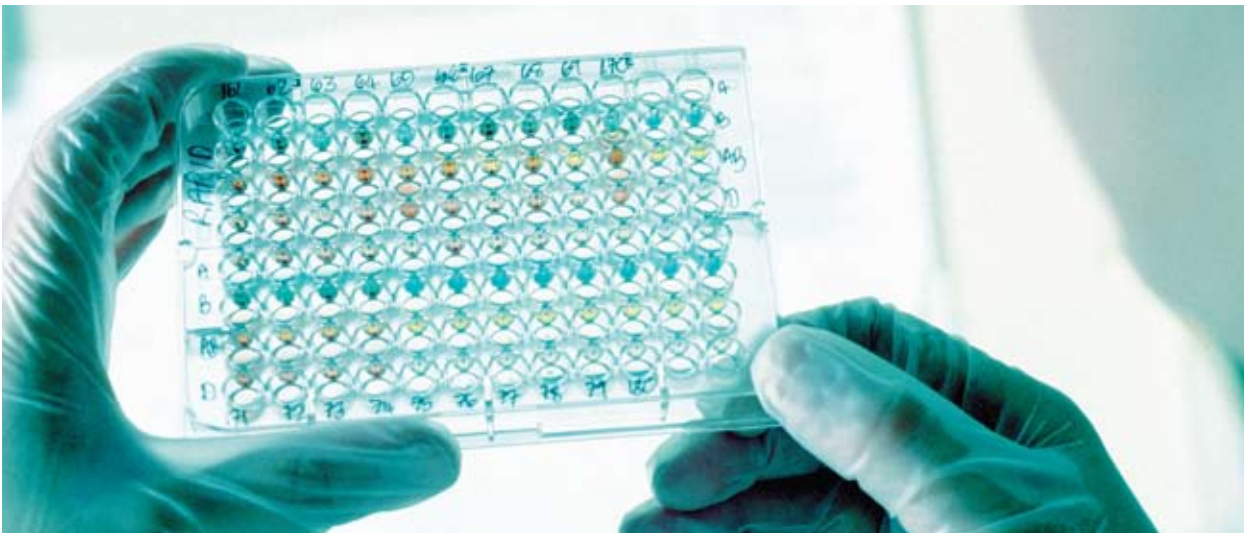
Strong allied skills, ancillary industries and a robust service provider network

State support: \$2 billion multi-year Biosciences Enterprise commitment, \$2.8 billion Economic Stimulus Program to bolster available capital

A skilled workforce

“Based on our firsthand experience, Pennsylvania is the future of the biopharmaceutical industry. Since establishing our headquarters in Southeastern Pennsylvania in 2004, we've seen exceptional success as a company, including the hiring of more than 500 new employees who are driving that success. Today, our Pennsylvania office is home to more than 1,000 employees, and we anticipate having nearly 1,300 team members based here by 2011. And it's because Pennsylvania offers all the right ingredients that allow a biopharma company to thrive including a talent pool that is second to none, close proximity to the New York-based financial district and Washington DC-based regulatory agencies, a connection to centers of educational excellence, and a wonderful place to live and raise a family. Shire's success is due in great part to our selection of Southeastern Pennsylvania as our headquarters.”

Matthew Emmens  
CEO, Shire Pharmaceuticals



# THE PENNSYLVANIA LIFE SCIENCES CONTINUUM



Pennsylvania is home to the entire continuum of the biosciences—world-class research; emerging biotechnology, medical device and diagnostic companies; mature industry; global pharmaceuticals; supportive state government; and organizations that help transition companies through the growth stages. At each step along this continuum, Pennsylvania boasts globally recognized organizations and people.

In Pennsylvania, the biosciences industry incorporates biotechnology, pharmaceutical, medical device, and diagnostic companies, as well as directly related companies such as contract research organizations, contract manufacturers, laboratory equipment manufacturers and others.

## IMPACT MEASURES

**1,751** BUSINESS ESTABLISHMENTS

**72,835** BIOSCIENCE JOBS

ranking Pennsylvania among the top six state employers in three of the four major bioscience subsectors

**326,226** TOTAL EMPLOYMENT IMPACT

including bioscience jobs and jobs added through the ripple effect

**\$69,474** IN AVERAGE ANNUAL WAGES

for a bioscience worker in the Commonwealth, nearly twice the average private sector wage (\$38,055) for all workers in the state

SOURCE: PENNSYLVANIA BIO 2007 PENNSYLVANIA BIOSCIENCE INDUSTRY REPORT AND DIRECTORY

### WORLD-CLASS RESEARCH

Carnegie Mellon University  
Drexel University  
Fox Chase Cancer Center  
Geisinger Clinic  
Lehigh University  
Pennsylvania State University  
Temple University  
Thomas Jefferson University  
University of Pennsylvania  
University of Pittsburgh  
University of the Sciences in Philadelphia  
Windber Research Institution  
Wistar Institute

### COMMERCIALIZATION

University Research Grants  
Pennsylvania Life Science Greenhouses  
Ben Franklin Technology Partners

### GLOBAL PHARMACEUTICALS

Bayer  
Cephalon  
GlaxoSmithKline  
Johnson & Johnson  
Merck  
sanofi-aventis  
sanofi pasteur  
Shire  
Wyeth

### EMERGING INDUSTRY

Agentase  
Hanson Technologies  
Locus Pharmaceuticals  
INRange Systems  
Neuronyx  
Protez Pharmaceuticals  
Avid Radiopharmaceuticals  
Saladax Biomedical



### MATURE INDUSTRY

Adolor  
Auxilium  
Centocor  
Diamyd  
Endo  
MedImmune  
MEDRAD  
OraSure  
Puricore  
Respironics  
ViroPharma

### DEVICE AND DIAGNOSTICS

ALung  
Fujirebio  
GlucoLight  
Immunicon  
Kensley Nash  
MEDRAD  
Neuronetics  
Orthovita  
RedPath  
Renal Solutions  
Respironics



# RESEARCH INSTITUTIONS

The National Institutes of Health (NIH) provided \$1.4 billion in 2007 to Pennsylvania’s world-class academic/research institutions. The University of Pennsylvania and the University of Pittsburgh are in the top ten in the nation for NIH funding. Pennsylvania’s institutions provide a great pool of breakthrough research and qualified workers for bioscience companies.

## RESEARCH INSTITUTIONS IN PENNSYLVANIA HAVE MADE SUBSTANTIAL CONTRIBUTIONS TO GLOBAL HEALTH ADVANCEMENTS:

- The polio vaccine (University of Pittsburgh)
- The rotavirus vaccine (Children’s Hospital of Philadelphia and Wistar Institute)
- The rubella vaccine (Wistar Institute)
- The original blood-based Hepatitis B vaccine (Fox Chase Cancer Center)
- The first hospital in the U.S. (Pennsylvania Hospital founded in 1751)

## PENNSYLVANIA’S RESEARCH INSTITUTIONS ARE AMONG THE MOST PRESTIGIOUS IN THE WORLD.

Carnegie Mellon University	Pennsylvania State University	University of the Sciences in Philadelphia
Children’s Hospital of Philadelphia	Temple University	Windber Research Institution
Drexel University	Thomas Jefferson University	Wistar Institute
Fox Chase Cancer Center	University of Pennsylvania	
Geisinger Health System	University of Pittsburgh	
Lehigh University	University of Pittsburgh Medical Center	

PENNSYLVANIA’S WORLD-CLASS ACADEMIC/RESEARCH INSTITUTIONS GARNER SUBSTANTIAL NIH FUNDING, \$1.4 BILLION IN 2007.

PENNSYLVANIA IS #4 IN THE NATION FOR THE NUMBER OF BIOLOGICAL SCIENTISTS IN THE WORKFORCE WITH NEARLY 24,000 CURRENTLY EMPLOYED THROUGHOUT THE COMMONWEALTH.

# RESEARCH



“Research institutions can expand efforts if they can have a long-term plan with stable support. It can take five to ten years to work through a medical research problem, and institutions need to be able to plan to attract the scientists who can do this. CURE funding [Tobacco Settlement Fund] helped enable Wistar to grow from 26 faculty members in 2002 to 34 today. Since 2002, our federal funding has increased about 60 percent, from 21.6 million to 34.7 million.”

**DR. RUSSEL KAUFMAN**  
PRESIDENT AND CEO, THE WISTAR INSTITUTE IN PHILADELPHIA

# PENNSYLVANIA'S UNIVERSITIES



University of Pennsylvania

University of Pittsburgh

Today, scientists at Pennsylvania's research institutions are furthering the discovery of tomorrow's medicines, including breakthroughs in cancer treatments, therapies for cardiovascular and pulmonary diseases, neurosciences and regenerative medicine.

Universities in Pennsylvania are contributing greatly to new therapies, new companies and job growth. For example, in 2007, The University of Pennsylvania was issued 81 patents, executed 50 technology commercialization agreements, and facilitated the creation of 3 new companies. In total, Penn's overall commercialization efforts generated \$151 million in licensing revenue.

Of the University of Pittsburgh's 58 technology licenses/options, 26 were in the life sciences sector. In 2007, 16 patents were issued and 6 start-up bioscience companies were created.

**“ Pennsylvania is one of this nation's four leading states for biomedical research activity – both academic and industrial. We have tremendous momentum, anchored by two of the country's most powerful institutions – the University of Pittsburgh and the University of Pennsylvania – for NIH-funded research, and the additional power of the biopharmaceutical industry. ”**

**Dr. Arthur Levine**  
Senior Vice Chancellor for the Health Sciences and Dean, School of Medicine  
University of Pittsburgh

**“ One of America's great Ivy League research universities, The University of Pennsylvania, is distinguished by successful interdisciplinary collaborations and a prominent history of putting research into productive practice for our nation and world. Our faculty ranks third in the nation in NIH funding, and they are active across the entire range of biotech industry activities. Every day, Penn scientists, engineers and entrepreneurs are making fundamental discoveries in basic research, creating innovative new technologies, launching new start-up companies, forging productive corporate partnerships, and delivering effective treatments and patient care. Working with both the private sector and the Commonwealth, we are making Pennsylvania the place to be for biotechnology in the 21st century. ”**

**Dr. Amy Gutmann**  
President, University of Pennsylvania

## KEYSTONE INNOVATION ZONES

To further encourage collaboration among academia and industry, Pennsylvania created the Keystone Innovation Zone (KIZ) program in 2004. KIZs gather and align the combined resources of institutions of higher education, private businesses, business support organizations, commercial lending institutions, venture capital networks (including angel investors) and foundations. Companion programs provide \$12.5 million in funding to enhance technology transfer within the Zones and recruit top-level university faculty.

## CURE PROGRAM

The Commonwealth of Pennsylvania invests directly in medical research. As part of the tobacco settlement legislation of 2001, Pennsylvania created the Commonwealth Universal Research Enhancement (CURE) grant program. Since 2001, Pennsylvania has invested more than \$228 million of the tobacco settlement funds directly into health-related research projects.



# THE LIFE SCIENCES GREENHOUSE INITIATIVE

Pennsylvania's Life Sciences Greenhouse Initiative was created as part of a larger plan to ensure continued growth in the biosciences in Pennsylvania. Since its inception, the Greenhouse Initiative has established a national reputation—it is cited by the Battelle Technology Partnership as one of only two university/industry funding programs focused solely on the biosciences in the U.S., and it has become a national model for state funding of early stage risk capital in the biosciences.

The Life Sciences Greenhouse Initiative was designed to be a flexible mechanism for the commercialization of biotechnology and other life science business opportunities by accelerating technology transfer, enhancing collaboration and attracting new business. There are three regional Greenhouses to respond to the unique strengths and opportunities in each region of Pennsylvania.

From investment capital to education and other industry-focused initiatives, the Greenhouses are fueling the development of new therapies and devices focused on improving human health by funding and helping to position emerging new companies for success. Since 2001 the Greenhouses have directly invested more than \$35.8 million in more than 133 projects. The Greenhouses' 133 investments in emerging companies and projects have since attracted more than \$887 million in additional funding, product and service revenues, and proceeds from mergers and acquisitions to the Commonwealth.



## PENNSYLVANIA'S THREE REGIONAL GREENHOUSES INCLUDE

BioAdvance, The Biotechnology Greenhouse of Southeastern Pennsylvania

Life Sciences Greenhouse of Central Pennsylvania

The Pittsburgh Life Sciences Greenhouse



## BIOADVANCE, THE BIOTECHNOLOGY GREENHOUSE OF SOUTHEASTERN PENNSYLVANIA

[www.bioadvance.com](http://www.bioadvance.com)

### Overview >

BioAdvance is building on the Southeastern Pennsylvania region's strengths in life sciences, academic research and innovation.

### Key Programs >

BioAdvance's key programs include a \$20 million Greenhouse Fund which focuses on seed and pre-seed stage investments; its \$26 million BioAdvance Ventures Fund (managed by Quaker BioVentures) is now fully invested. BioAdvance has also spearheaded other successful programs such as the Greater Philadelphia Life Sciences Guide ([www.look4science.com](http://www.look4science.com)) and the Greater Philadelphia Bioinformatics Alliance ([www.gpba-bio.com](http://www.gpba-bio.com)).

### Funding Awarded >

To date, BioAdvance has received more than 341 applications, and has invested more than \$11.5 million in 30 total projects, including 21 companies and 9 academic institutions. BioAdvance companies have attracted more than \$200 million in additional funding.

### Companies >

BioAdvance has invested in young companies such as Avid Radiopharmaceuticals, Protez Pharmaceuticals, NuPathe, and Yaupon Therapeutics, to name a few. With many of the world's largest pharmaceutical companies having headquarters or significant facilities within a 90-minute drive of Philadelphia, the region is robust with collaborative opportunities.

“Protez Pharmaceuticals of Malvern PA is an outstanding example of the importance of access to funding from Commonwealth-supported organizations such as BioAdvance and Ben Franklin Technology Partners, which have been a driving force in our growth and success. Protez received seed-stage funding from BioAdvance and BFTP, and early-stage funding from BioAdvance Ventures. For Protez, the early-stage investments from these organizations were critical in our ability to reach company milestones, attract and hire personnel, and attract more than \$20 million to date in additional capital to the region.”

**Christopher Cashman**  
President and Chief Executive Officer, Protez Pharmaceuticals



## LIFE SCIENCES GREENHOUSE OF CENTRAL PENNSYLVANIA

[www.lsgpa.com](http://www.lsgpa.com)

### Overview >

The Life Sciences Greenhouse of Central Pennsylvania (LSGPA) focuses on drug discovery, biomedical devices, healthcare IT, and tools for advanced research.

### Key Programs >

Among LSGPA's key programs are the Gap Fund, which provides up to \$750,000 in seed-stage capital, and the Technology Development Fund, which provides up to \$250,000 to explore business opportunities and move research into the marketplace.

### Funding Awarded >

To date, the LSGPA has received more than 271 applications for funding, and has invested nearly \$15 million in 56 total projects, including 37 companies and 19 academic technology projects. LSGPA company investments have attracted more than \$58 million in additional funding.

### Companies >

Central Pennsylvania's biosciences corporate community is diverse, with strengths in devices, manufacture of biologics and diagnostics, and contract research development. The LSGPA recently invested in young companies such as INRange Systems, Inc., manufacturer of a device for remote medication management, and Strategic Polymer Sciences, Inc., a developer of thin-film polymers for use in cardiac devices.

“We find Pennsylvania a great place to do business. The Harrisburg location is convenient to our east coast clients, and we've been pleased with the talented people we've found in the region. The Greenhouse goes all-out to encourage technology companies like us to make a home in Pennsylvania.”

**Jonathan Morris, MD.**  
CEO, ProSanos



## THE PITTSBURGH LIFE SCIENCES GREENHOUSE

[www.plsg.com](http://www.plsg.com)

### Overview >

The Pittsburgh Life Sciences Greenhouse (PLSG) provides capital investments and customized company formation and business growth services to southwestern Pennsylvania's life sciences enterprises. PLSG supports biosciences companies with promising innovations in the following concentrations: biotechnology tools, diagnostics, healthcare IT, medical devices and therapeutics.

### Key Programs >

The PLSG's key programs include the Executives in Residence program, the Technology Development Fund and the Early Stage Fund. In addition, PLSG invested \$15.2M through the Commonwealth Health Ventures Fund in VC firms for local investments leveraging over \$100M for the region. The PLSG also offers a SBIR Advance program, incubator space and a Workforce Development Training program.

### Funding Awarded >

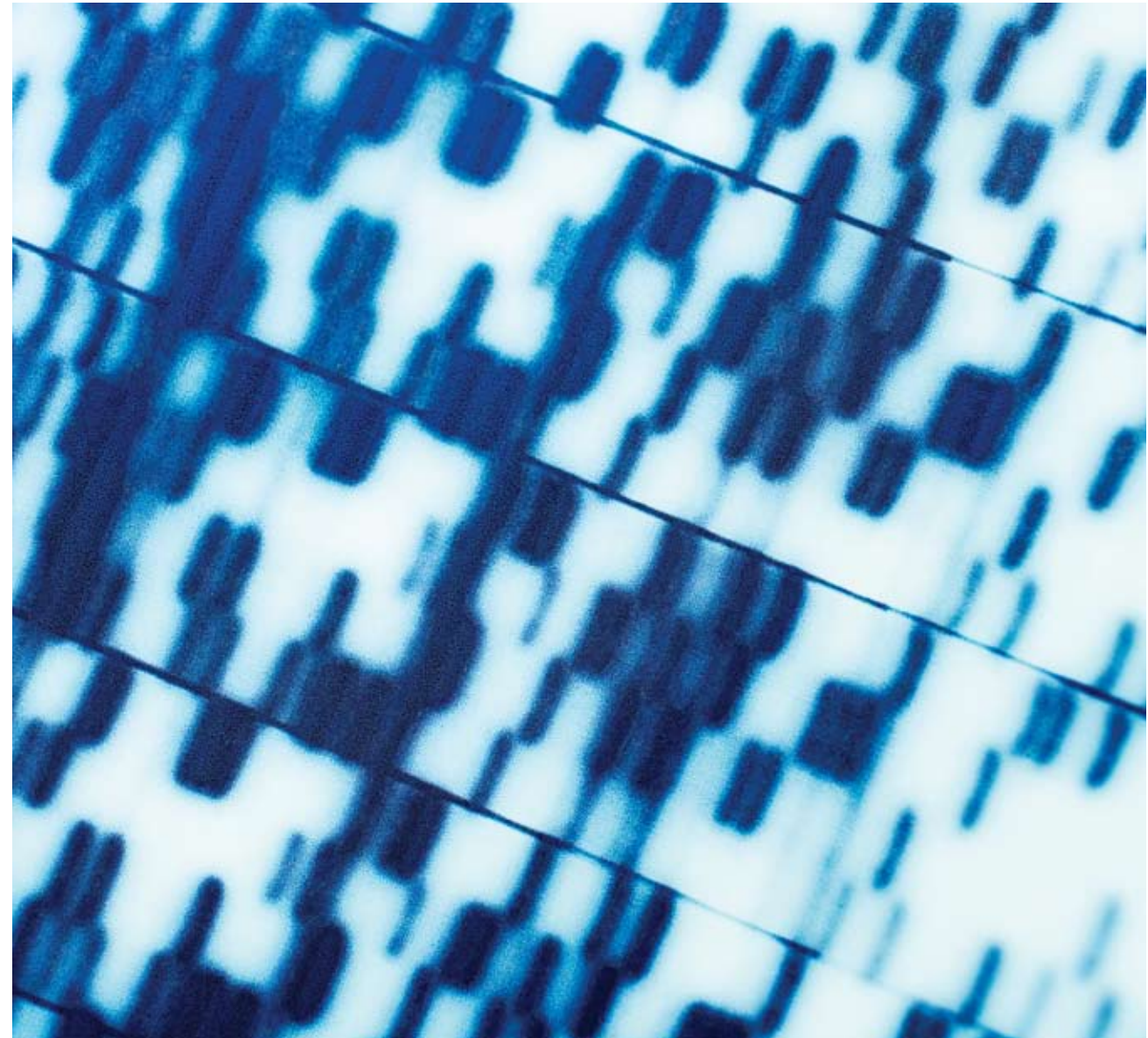
To date, the PLSG has received more than 230 applications for funding, and has invested nearly \$10 million in 84 total projects, including 47 companies. The PLSG company investments have attracted more than \$300M in additional funding. To date, more than 220 companies have participated in PLSG Capital Investment and Business Growth programs.

### Companies >

The PLSG has invested in companies such as Agentase, Cellumen, Renal Solutions, Cartesia Dx, ClearCount Medical Solutions, RedPath Integrated Pathology and Cohera Medical, Inc., to name a few. The region has a strong track record of success in medical device companies which is reflected in the PLSG's client portfolio—47% of the PLSG's clients are medical device companies. The remaining percentage includes Therapeutics (22%), Biotech Tools (15%), Healthcare IT (12%) and Diagnostics (4%). Companies like MEDRAD, McKesson and Respiroics anchor the region's concentration in medical devices while strong university research at Carnegie Mellon, Duquesne, University of Pittsburgh and the University of Pittsburgh Medical Center are a tremendous source of biosciences innovation and early-stage technology development in all sectors.

“ I believe it would be difficult to start a company anywhere but Pennsylvania. I was able to come home to Pittsburgh and expand my network to help get this company off the ground. We had the product, the market niche, but needed the assistance with finding capital. We received great support in Pennsylvania to help us get started. ”

Pete DeComo  
CEO, Renal Solutions



# BEN FRANKLIN TECHNOLOGY PARTNERS

Ben Franklin Technology Partners is a statewide network that catalyzes entrepreneurship and technological innovation as drivers of economic growth. Operating regionally with four Partners strategically located throughout the Commonwealth, Ben Franklin provides emerging and existing businesses with access to risk capital, business and technology expertise, and specialized third-party resources.

Ben Franklin's investments, services and access to resources comprise a comprehensive support structure that helps emerging companies succeed and existing companies to grow while supporting the development of a vibrant entrepreneurial culture that is critical to sustainable growth.

Ben Franklin invests across the spectrum of emerging technologies, including the life sciences. Over the past six years alone, Ben Franklin has invested more than \$35 million in 155 companies. During the same period, portfolio companies have leveraged an additional \$675 million in company match/follow-on funding and have created and/or retained 2,475 jobs.

For example, in 2001, Ben Franklin invested in Exton-based Morphotek, a biopharmaceutical company focused on the discovery and development of therapeutic monoclonal antibodies for the treatment of cancer, inflammatory and infectious diseases. Acquired by Eisai Co., Ltd. of Tokyo, Japan, in 2007 for \$325 million, today the company employs more than 80 people.

In 2002, Ben Franklin invested in State College-based SoftGenetics to develop software tools to help genetic research scientists evaluate DNA sequencing information to identify variants and mutations causative of human inherited and environmentally caused diseases. Today, SoftGenetics has nine employees.

In 2003, Ben Franklin invested in GlucoLight, a Bethlehem-based company that began in the Ben Franklin Incubator, to develop a continuous, non-invasive device and algorithm that accurately predicts changes in glucose levels without drawing blood. GlucoLight subsequently raised more than \$9 million in follow-on funds, and, in 2007, relocated from the Ben Franklin Business Incubator to a nearby facility; they now employ 15 people.

In 2004, Ben Franklin invested in Pittsburgh-based RedPath Integrated Pathology to develop genetic-based biopsy tools to resolve diagnostic dilemmas for pathologists, clinicians and patients by providing early and definitive diagnoses of cancer. RedPath subsequently raised \$6.5 million in follow-on funding and today employs 31 people.

EVIDENCE OF BEN FRANKLIN'S SUCCESS EXISTS IN

**155** DEALS

**\$35** MILLION INVESTED

**\$675** MILLION LEVERAGED

**2,475** JOBS CREATED/RETAINED



THE FOUR REGIONALLY-BASED BEN FRANKLIN TECHNOLOGY PARTNERS ARE

Ben Franklin  
Technology Partners  
of Central and  
Northern PA

Ben Franklin  
Technology Partners  
of Northeastern PA

Ben Franklin  
Technology Partners  
of Southeastern PA

Innovation Works,  
Ben Franklin  
Technology Partners  
of Southwestern PA



## EMERGING INDUSTRY



“It is exciting to be part of the vibrant bioscience industry in Pennsylvania and we look forward to continuing to contribute to its growth through our cellular systems biology platform.”

D. LANSING TAYLOR, PH.D.  
PRESIDENT AND CEO, CELLUMEN, INC.

## EMERGING INDUSTRY

Pennsylvania is a national model for its continuum of resources for life sciences entrepreneurs. Its network of early stage investors allows the very best companies to grow faster and provides direct access to deal flow for venture investors. Pennsylvania's three Life Sciences Greenhouses have seeded more than 100 companies in the life sciences sector alone since 2003.

Emerging companies like Agentase, Hanson Technologies, Locus Pharmaceuticals, INRange Systems, Neuronix, Protez Pharmaceuticals, Avid Radiopharmaceuticals and Saladax Medical are just a few of the companies preparing to make substantial contributions to the life sciences in Pennsylvania.

“Our location in Pennsylvania puts us right in the middle of the biopharmaceutical corridor giving us access to experts in clinical and commercial development to drive our programs and ultimately deliver an innovative pain medication to improve the quality of life of people suffering from chronic pain, which includes 50 million people in North America alone.”

Christopher Gallen, M.D., Ph.D.  
President and CEO, Neuromed Pharmaceuticals, Ltd.

## VENTURE CAPITAL

Venture capital investment in Pennsylvania bioscience companies continues to climb. In 2007, more than \$500 million in venture capital investment went to Pennsylvania biotechnology, medical device and equipment companies, according to the PricewaterhouseCoopers/Thomas Venture Economics/National Venture Capital Association MoneyTree™ Survey. Pennsylvania is home to a large community of innovative, emerging companies that find the Commonwealth an ideal location because of the access to university technologies and research talent, a skilled workforce to help fuel company growth, and industry partners to assist with financing, R&D, manufacturing, marketing and sales.

Investment is on the rise because of innovative programs in Pennsylvania that are helping to draw out the best research and jumpstart young companies. Programs such as the Pennsylvania Life Sciences Greenhouse Initiative and the Ben Franklin Technology Partners are helping entrepreneurs start and grow new ventures in Pennsylvania.

In addition, the Pennsylvania Tobacco Settlement Investment Board committed \$60 million in venture fund investments with Quaker BioVentures, PA Early Stage Partners, Commerce Health Ventures, and Birchmere Ventures III. All four funds will continue to invest in Pennsylvania-based biosciences companies and are creating a pool of funds that are turning research and development into viable companies and jobs. As part of Pennsylvania's \$2.8 billion Economic Stimulus Package, two additional programs are attracting investments in Pennsylvania companies:

### NEW PA VENTURE INVESTMENT PROGRAM

The program addresses the growing financing needs of Pennsylvania businesses by providing \$60 million to venture capital partnerships.

### NEW PA VENTURE GUARANTEE PROGRAM

This program provides a first dollar loss guarantee of 50% for top-tier venture capital partnerships on their Pennsylvania portfolio of company investments. The program can provide up to \$250 million in guarantees, which translates to \$500 million in investments in Pennsylvania companies.

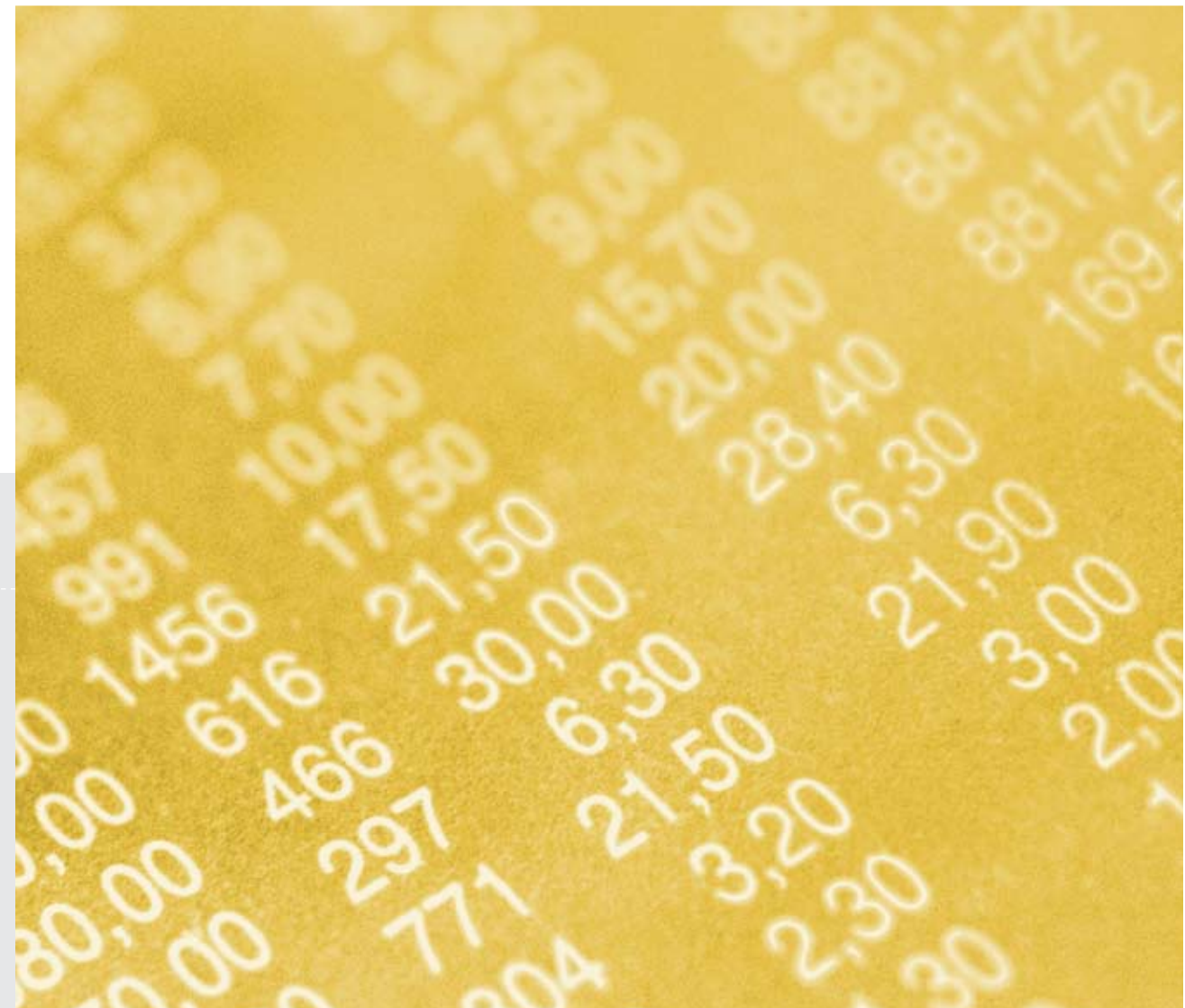
VENTURE CAPITAL SUPPORT FOR PENNSYLVANIA'S  
BIOSCIENCE COMPANIES IS RISING

**APPROXIMATELY \$307 MILLION IN VENTURE CAPITAL IS INVESTED IN  
PENNSYLVANIA BIOSCIENCE COMPANIES.**

**\$140 MILLION IN GRANTS AND TAX CREDITS TO MORE THAN 70 BIOSCIENCE  
COMPANIES ARE EXPECTED TO LEVERAGE MORE THAN \$280 MILLION IN  
PRIVATE SECTOR FUNDS.**

“ Pennsylvania’s proactive support of public-private partnerships will continue to grow venture capital. This region has resources superior to any other in the biosciences industry, and venture investors are just beginning to understand the wealth of opportunity here.”

P. SHERRILL NEFF  
MANAGING PARTNER, QUAKER BIOVENTURES





## MATURE INDUSTRY

At the heart of the life sciences industry in Pennsylvania is a legacy of innovation that began with a strong presence of global pharmaceutical companies and has continued to grow and evolve. Today, Pennsylvania boasts not only global pharmaceutical companies but also a strong community of emerging companies and mature industry. Pennsylvania is home to the companies that are discovering, developing, manufacturing, and distributing therapeutics, vaccines, medical devices, and diagnostics that are providing better treatment options and testing to patients around the world, improving the lives of millions of people. Companies such as Centocor, MedImmune, MEDRAD, and Respiroics are fueling the growth of the biosciences in Pennsylvania. Also on the rise in Pennsylvania is a community of publicly-traded companies, in addition to our strong base of global pharmaceuticals, that are now making or are poised to make great contributions to the world's health and the global economy — Adolor Corporation, Auxilium Pharmaceuticals, Diamyd Medical, Endo Pharmaceuticals, Kensey Nash Corporation, OraSure Technologies, Orthovita, Inc., Puricore, ViroPharma Incorporated, and many others.

# MATURE INDUSTRIES & GLOBAL PHARMACEUTICALS

“ Centocor’s commitment to Pennsylvania goes back to our very roots as a start-up biopharmaceutical company striving to meet the needs of people suffering from serious disease. We remain committed to Pennsylvania because of the Commonwealth’s high quality workforce and business-friendly environment. ”

JAY SIEGEL  
PRESIDENT, CENTOCOR RESEARCH & DEVELOPMENT, INC.

“ With its existing assets, strong company base, outstanding research institutions, and commitment from the state government and support organizations, Pennsylvania will continue to grow and lead in the biosciences. ”

Mickey Flynn  
President, Pennsylvania Bio

## GLOBAL PHARMACEUTICALS

Pennsylvania is positioned well in “the pharmaceutical belt” and the global companies that call the region home are not only investing in the research and development of their own therapies, they also provide crucial funding for emerging life sciences companies. By providing the region with an exceptional pool of talented workers, including scientists, managers, and future corporate leaders, as well as providing partners for the region’s growing biotechnology companies, global pharmaceutical companies have helped to build Pennsylvania’s life sciences community. Pharmaceutical innovation has a deep history in Pennsylvania. The University of the Sciences in Philadelphia graduated the men who established what are now leading global pharmaceutical companies: John Wyeth, Eli and Josiah Lilly, Gerald Rorer, William R. Warner, Robert McNeil and Robert McNeil Jr., and Silas M. Burroughs. Many of the companies these men founded, as well as others, today have a significant presence in Pennsylvania: Bayer, Cephalon, GlaxoSmithKline, Johnson & Johnson, Merck, sanofi-aventis, sanofi pasteur, Shire and Wyeth.

**Today, Pennsylvania is a global leader in the life sciences because of the unique blend of world-class research institutions; emerging biotechnology, device and diagnostics; mature industry; and global pharmaceuticals. From the growth and success of early stage ventures to the retention and relocation of established firms attracted by the mix of the Commonwealth’s advantages and incentive programs, Pennsylvania is the future of the life sciences industry.**

**“We feel good about what we’ve been able to accomplish. The location of our corporate headquarters and R&D labs in the Greater Philadelphia Region has provided clear advantages to the company over the past 20 years. Philadelphia has more medical schools than any other city in America, providing research partners; most major pharmaceutical companies are located in our region, creating a rich pool of talent; and being within about an hour of New York City and Washington DC is a distinct advantage — in our capital-intensive and highly regulated industry.”**

**Dr. Frank Baldino, Jr.  
CEO, Cephalon**

**“The life sciences industry remains one of the most dynamic and exciting industry sectors in the world. Over the past five years, we have developed an economic climate and workforce that are prepared to handle the innovations and strategies that will shape the future for generations of Pennsylvanians.”**

**EDWARD G. RENDELL  
GOVERNOR, COMMONWEALTH OF PENNSYLVANIA**





## SUPPORTIVE STATE GOVERNMENT



“Pennsylvania’s strong biosciences industry base, world renowned universities, and deep talent pool provide for an unrivaled combination of strengths. The life sciences industry has emerged as one of Pennsylvania’s key economic drivers, with the state’s innovative programs helping to drive that success.”

EDWARD G. RENDELL  
GOVERNOR, COMMONWEALTH OF PENNSYLVANIA

The only state to dedicate 100% of all tobacco settlement funds to health-related programs, the Commonwealth of Pennsylvania has made a \$2 billion multi-year commitment to life sciences. With more than \$307 million in venture capital and \$140 million in grants and tax credits awarded to 70 bioscience companies, Pennsylvania’s business environment is the most supportive in the nation for bioscience companies at every stage of the life sciences continuum.

In 2007 alone, the Commonwealth of Pennsylvania directly and through its partner organizations awarded over \$150 million to more than 80 biosciences companies and biosciences-related infrastructure projects in the form of Pennsylvania state loans, grants and tax credits. These awards are helping to grow existing Pennsylvania biosciences companies and relocate others to Pennsylvania. Pennsylvania’s business environment is the most supportive in the nation for bioscience companies at every stage of the life sciences continuum. Dan Berglund, President and CEO of the State Science and Technology Institute (SSTI), a national organization that studies the trends in technology-based economic development, agrees: “Pennsylvania is viewed as a national leader in supporting the life sciences. Its efforts have been particularly impressive in encouraging the formation and growth of life sciences companies.”

Companies performing research and development may be eligible for the \$40 million in R&D tax credits or \$25 million in KIZ tax credits, which can be sold for much-needed cash. Companies in the emerging stage may benefit from one of Pennsylvania’s state-supported venture capital programs, including:

THE LIFE SCIENCES GREENHOUSE INITIATIVE

BEN FRANKLIN TECHNOLOGY PARTNERS

A SET OF STATE-FUNDED INCENTIVES INCLUDING GRANTS, LOANS, AND TRAINING SUBSIDIES

Companies that are in the mature phase may be eligible for incentives from the Governor’s Action Team, comprised of high-level economic development professionals who report directly to the Governor to create incentive packages for domestic and international biosciences companies.

This brochure, produced in 2008, focuses on Pennsylvania's life sciences industry. It is part of a series of Pennsylvania technology-based economic development collateral pieces that exist under the "TechFormation" brand name. To view the other pieces in the series, visit [newPA.com](http://newPA.com) and click on **Technology Investment/Industry Initiatives**.

For more information on any state programs listed in this booklet, call **866-GO-NEWPA** or visit [newPA.com](http://newPA.com). For updates on the Pennsylvania life sciences industry, visit the Pennsylvania BIO website, [pennsylvaniabio.org](http://pennsylvaniabio.org).

