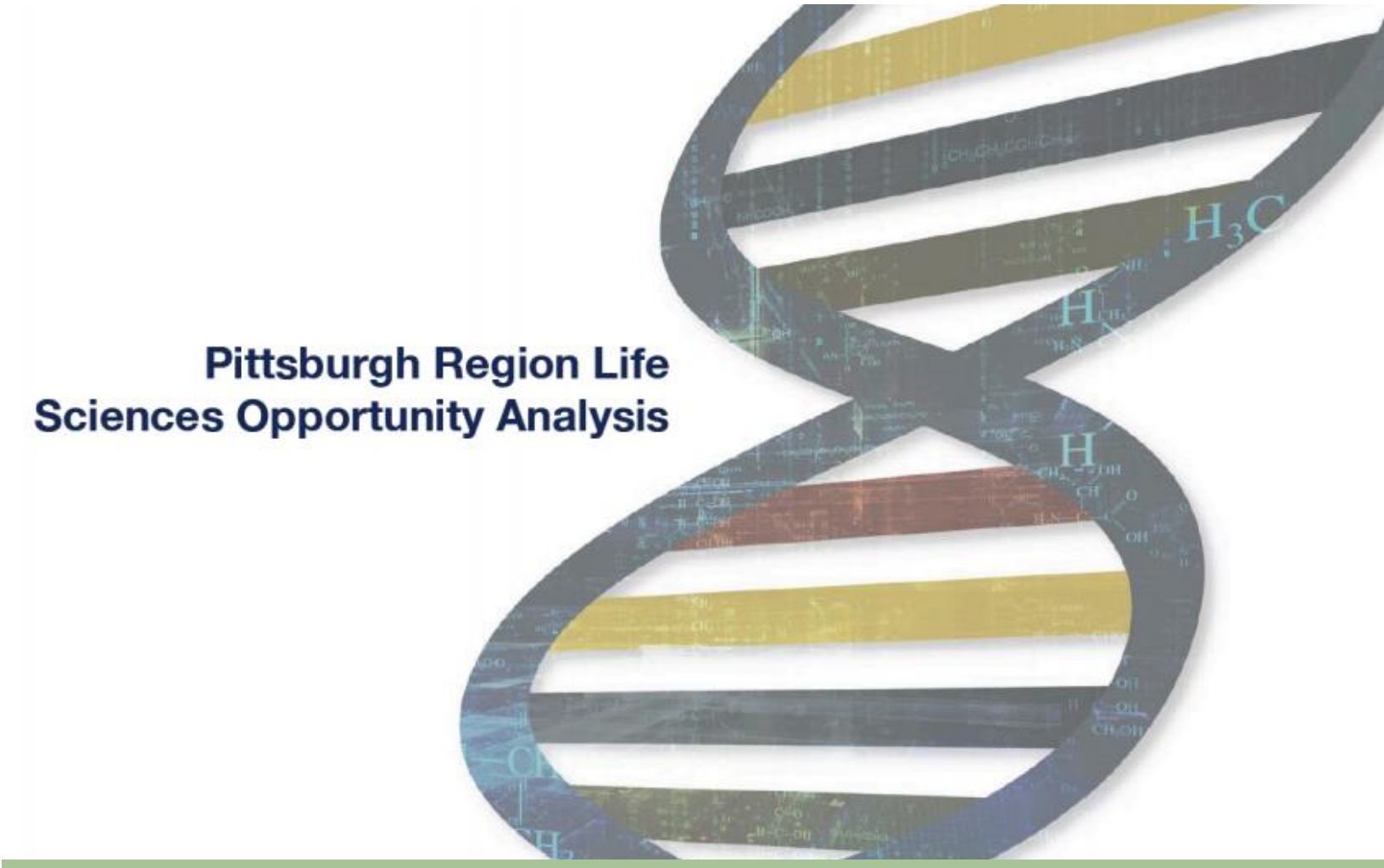

Pittsburgh Region Life Sciences Opportunity Analysis

APLU | INNOVATION AND ECONOMIC PROSPERITY UNIVERSITIES AWARDS PROGRAM

CASE STUDY 2018

ABOUT LIFE SCIENCES OPPORTUNITY ANALYSIS

With funding from the Henry L. Hillman and RK Mellon foundations, the University of Pittsburgh Office of Economic Partnerships (OEP) commissioned a Life Sciences Opportunity Analysis for the Pittsburgh region to identify areas for growth; to seek recommendations for strategies framed by talent, innovation, and place; and to create new economic engagement pathways.

Figure 1: Pittsburgh Life Sciences Ecosystem Today

The University of Pittsburgh ranks 5th in funding from the National Institutes of Health (NIH) receiving $266 per capita in NIH funding compared to a U.S. average of $65.

Pittsburgh-based economic development consulting firm Fourth Economy conducted the analysis in partnership with Warner Advisors, a Silicon Valley-based life sciences strategy firm. The report was based on one-on-one interviews with 33 life science leaders representing academic, industrial, financial and non-profit components; primary data collection and analysis; secondary desktop research on industry trends, leading/emerging life science clusters and benchmarking; and focus group discussions.

The report revealed existing gaps, current challenges and opportunities:

- Commercial Gap – Pittsburgh is not an industry leader in life sciences despite prominence in research
- Investment Gap – the region has insufficient resources and personnel to translate research to market
- Facilities Gap – the sector is scattering as it grows because there is no coordinated strategy to create a central place of gravity
- Coordination Gap – Convening cluster organizations have accelerated growth in other regions

The University of Pittsburgh's nearly $71 million in industry-funded R&D falls well below the average of $189 million. If the University of Pittsburgh attracted an average level of life-sciences industry R&D, it would generate nearly $310 million.

Current Challenges:

- The Pittsburgh life sciences ecosystem is scattered with pockets of activity throughout the city and the larger region. This is both a factor of the small size of the industry and lack of a primary geographic life sciences hub.

- Most R&D is at the basic research level as academic researchers work to solve early-stage technology challenges. Limited NIH-backed R&D is being conducted by corporate partners or being translated into commercial opportunities. The few large private life sciences firms that are conducting R&D in the region are not significantly linked to the universities or startups. Venture-backed R&D is increasing, but the region lags its peers in overall funding levels and average deal size.

- The region is not turning research into commercial activities and is specifically underperforming in generating regional startups and high-growth companies.

- Regional investment trends are improving, but the numbers remain low. The region lacks local capital to fund a larger crop of life sciences startups or to support growth in maturing startups.

Opportunities for Pittsburgh Life Sciences:

Pittsburgh has the critical components (Figure 2) for a thriving Life Sciences ecosystem:

Opportunity 1: The region has distinct strengths in research spanning several disciplines that converge with market trends to provide a platform for global leadership in life sciences industries.

The University of Pittsburgh is widely recognized as a leader in life sciences research, UPMC is a top-ranked hospital system and Carnegie Mellon is a leader in computer science and engineering. This recognition can be leveraged to increase the region's national and global connectivity with the commercial life sciences sector. The region can leverage the University of Pittsburgh's research reputation to recruit companies for co-location and collaboration.

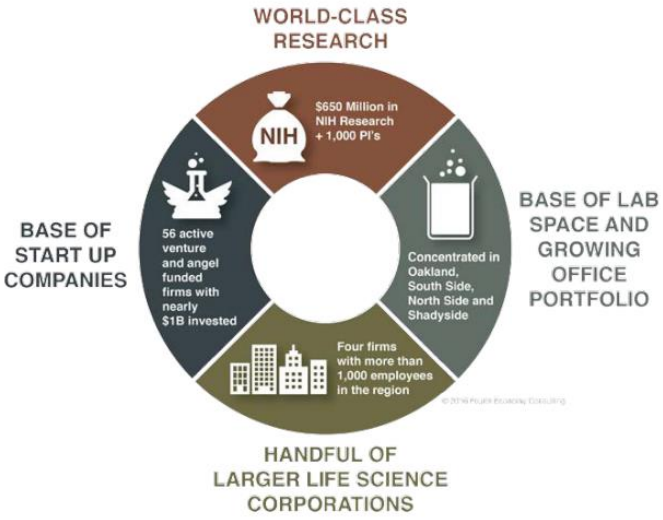

Figure 2: Pittsburgh Life Sciences Assets

Opportunity 2: The region has accelerated its capacity to translate research to market, and can further improve by dedicating resources and personnel to commercialization initiatives.

With leadership from its Innovation Institute, the University of Pittsburgh must continue to increase its capacity for validating and packaging the intellectual property (IP) it produces. As the volume of activity increases, this investment will need to rise. Conducting more research on the

competing technologies and patents from a legal and market perspective will provide potential investors and entrepreneurs with a better sense of the commercial opportunity the IP can provide.

Opportunity 3: With improved research on innovation corridors and increased coordination among sector leadership, there is an opportunity to create a central place of gravity for the sector.

With the university as a driving force, the region needs to establish a central hub for life sciences activity. Space in Oakland, the city's university district, is at a premium but creating or repurposing facilities for commercial collaborations with wet-lab capacity near the university will enable more interaction and collaboration among academic researchers, corporate partners and the startup community.

Opportunity 4: Continued research collaboration, the establishment of an innovation district, and increased coordination among sector leadership, generates momentum that can create a central hub for the sector.

The existence of a convening cluster organization has contributed to success in other regions by accelerating growth in the sector. The university needs to support the creation of a platform for coordinating a clear and unifying growth strategy to advance Life Sciences as an industry in Pittsburgh. The region needs to speak with one voice to effectively promote its technologies, researchers, and companies to a global audience.

The Life Sciences Gap Analysis was presented in May 2017 to 200 of the region's life sciences researchers, entrepreneurs, and industry executives. The release was strategically timed with OEP's launch of lifesciencespittsburgh.com, the first virtual hub for the region's life sciences community, and OEP's inaugural Life Sciences Week series of innovation forums dedicated to the life sciences (Figure 3).

OEP garnered the resources needed to launch these efforts by using the report to validate the need. Life Sciences week more than doubled in size in 2018, drawing 1,000 registrants from the regional life sciences community as well as attendees and sponsors from Silicon Valley, Boston, and D.C.

In addition to the creation of Life Sciences Week and lifesciencespittsburgh.com, the report fed directly into a Brookings Institution study on Pittsburgh creating a national platform for the university and region to

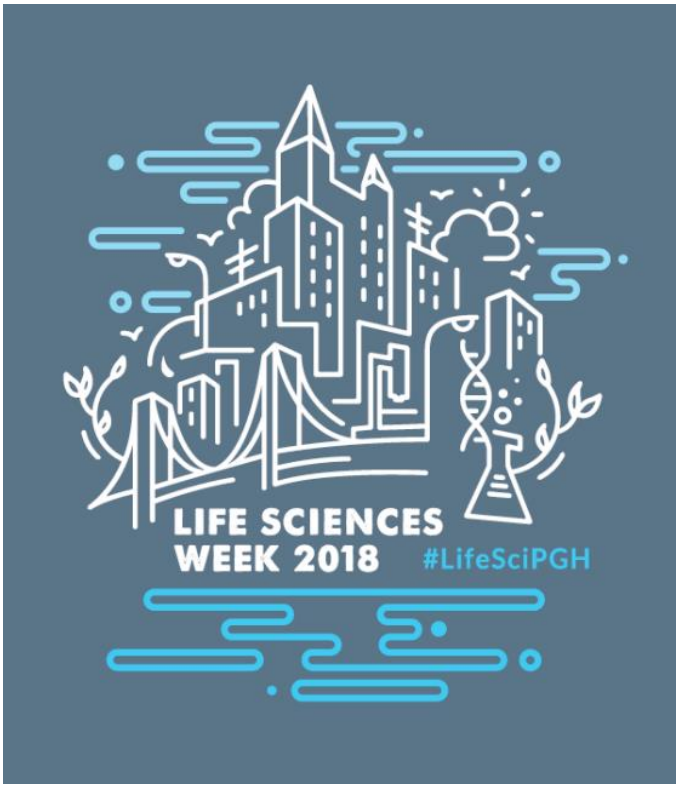

Figure 3: Inaugural Pittsburgh Life Sciences Week 2018

showcase its innovation assets in the life sciences. It laid the groundwork for OEP to draft and finalize the life sciences strategy for the region and accelerated work to establish a center of gravity for the region's life sciences work.

ABOUT APLU

The Association of Public and Land-grant Universities (APLU) is North America's oldest higher education association. APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. The association's membership consists of public research universities, land-grant institutions, state university systems, and affiliated organizations.

APLU's mission is to: expand access and improve student success to deliver the innovative workforce of tomorrow; advance and promote research and discovery to improve society, foster economic growth, and address global challenges; and build healthy, prosperous, equitable, and vibrant communities locally and globally.

Based in Washington, DC, the association's work is furthered by an active and effective advocacy arm that works with Congress and the administration as well as the media to advance federal policies that strengthen public universities and benefit the students they serve.

ABOUT THE IEP UNIVERSITIES PROGRAM

APLU and its **Commission on Economic and Community Engagement (CECE)** established the Innovation and Economic Prosperity (IEP) Universities Program to help higher education institutions codify, elevate, and advance their campus enterprise supporting economic and community development.

The **IEP designation program** recognizes institutions that have demonstrated a meaningful, ongoing and substantial commitment to economic and community development, growth, and economic opportunity.

The **IEP awards program** recognize exemplary and innovative projects in university-based economic and community engagement:

- **Talent** and workforce development
- **Innovation**, entrepreneurship, and tech-based economic development
- **Place** development through public service, outreach, and community engagement

Learn more at: www.APLU.org/IEP