



HEALTHCARE & HIGHER EDUCATION

Higher education and healthcare institutions are the prime engines of Philadelphia's economy, accounting for 32% of all jobs in the city and 20% of all jobs downtown. Since 2009, "eds and meds" jobs account for 30,800 of the 55,100 jobs added in the city since the recession.

Thomas Jefferson University accounts for more than half of Center City's educational, medical and health services employment and has steadily been increasing both its regional reach and downtown impact. In July 2017, Jefferson completed a merger with Philadelphia University, putting one of Philadelphia's largest medical institutions and one of its major design institutions under the same leadership, facilitating further cross-disciplinary study. The merger has resulted in programs such as JeffDESIGN, which teaches students to apply design thinking to solve healthcare challenges. At the end of 2017, Jefferson also announced plans to expand its Center City campus by leasing space being vacated by Aramark on East Market.

Penn Medicine, Drexel University and Children's Hospital of Philadelphia (CHOP) increased their combined number of jobs in Center City to 9,357, leasing both office and medical space, while eight smaller institutions employed more than

3,090 people. In addition to placing office and administrative jobs in Center City office buildings, CHOP and the University of Pennsylvania have been migrating east into new glass towers lining the Schuylkill River, further narrowing the gap between Center City and University City.

In fall 2016, Center City's 15 colleges and universities reported a total enrollment of 34,812 students. Adjacent to Center City, Drexel, Penn, Temple, and the University of the Sciences enrolled an additional 76,980 students. Well-connected to the downtown by public transit, thousands of these students live, shop and socialize in Center City. Of students who graduated in 2016, 60% of the degrees were in health, business or STEM (science, technology, engineering, and math). As graduates transition to employees, 67% of students reported to *Campus Philly* that they are likely to stay in Philadelphia.

Philadelphia's research institutions are driving innovation in the healthcare sector as well as other areas. According to the National Science Foundation's Higher Education Research and Development Survey, combined research spending at Drexel, Temple, Jefferson, and Penn totaled \$1.79 billion in 2016, up from \$1.34 billion in 2015. Those four institutions launched a total of 29 startups in 2016, applied for 316 patents, and

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generated income from active licenses totaling \$51.8 million. Penn's research and development expenditures ranked third in the nation in 2016, after increasing by 50% since 2015. Overall, Philadelphia's \$924 million in National Institutes of Health grants in 2017 puts the city in fourth place nationally behind Boston, New York, and Seattle.

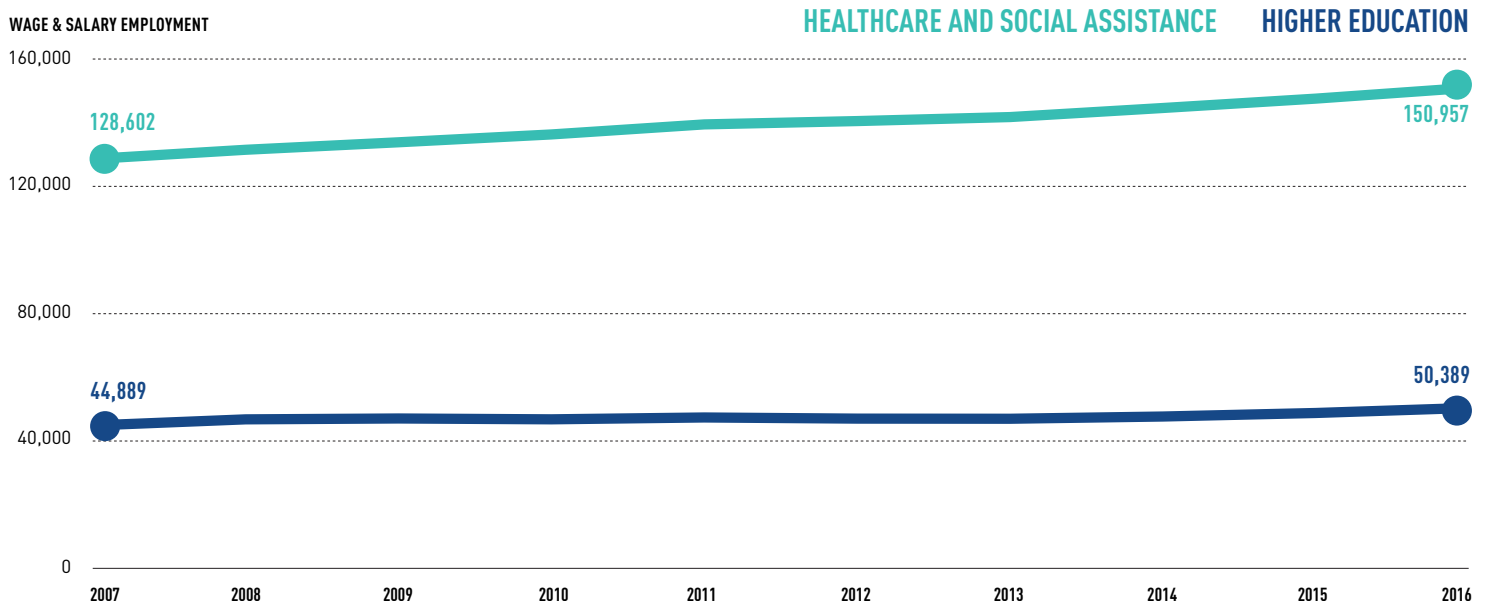
While the University City Science Center, Penovation Center and the Drexel Innovation District are all part of strategic initiatives to foster Philadelphia's ability to transfer academic research into economic development, Philadelphia has a lot of catching up to do. In the Boston area, for example, the Massachusetts Institute of Technology alone launched 25 startups, applied for 470 patents and generated \$49.4 million in active licenses. Nine of the top 30 pharmaceutical companies nationally are physically clustered around MIT's Cambridge campus. By contrast, the Greater Philadelphia area ranks sixth among the nation's biopharma clusters, behind Boston, San Francisco, New York, San Diego and Washington, D.C.

In 2018, the Cambridge Innovation Center, which has played a significant role in turning ideas into successful entrepreneurial ventures in the Boston area, will open in the new University City Science Center space at 3675 Market St. Establishing stronger connections between Philadelphia's research institutions and industry, capital, and local suppliers has the potential to significantly boost job growth.

THE HEALTHCARE AND EDUCATION SECTOR PROVIDES 33% OF ALL JOBS IN THE CITY AND 20% OF ALL DOWNTOWN JOBS



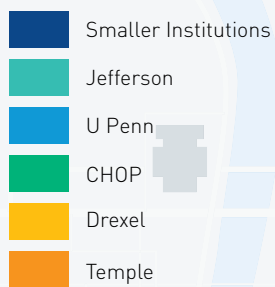
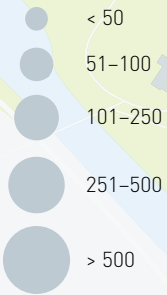
PHILADELPHIA EDUCATION AND HEALTH SERVICES EMPLOYMENT



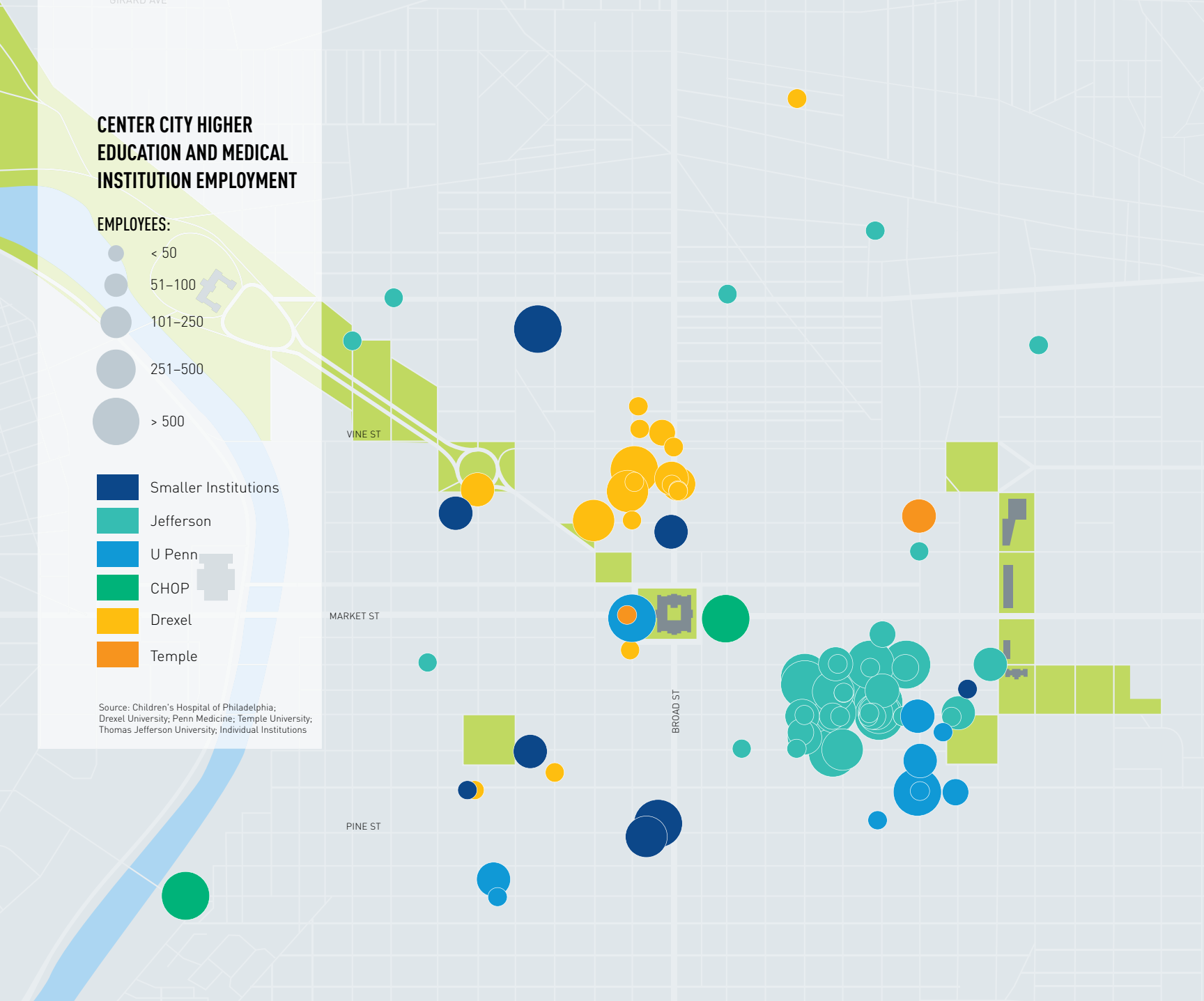
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages

CENTER CITY HIGHER EDUCATION AND MEDICAL INSTITUTION EMPLOYMENT

EMPLOYEES:

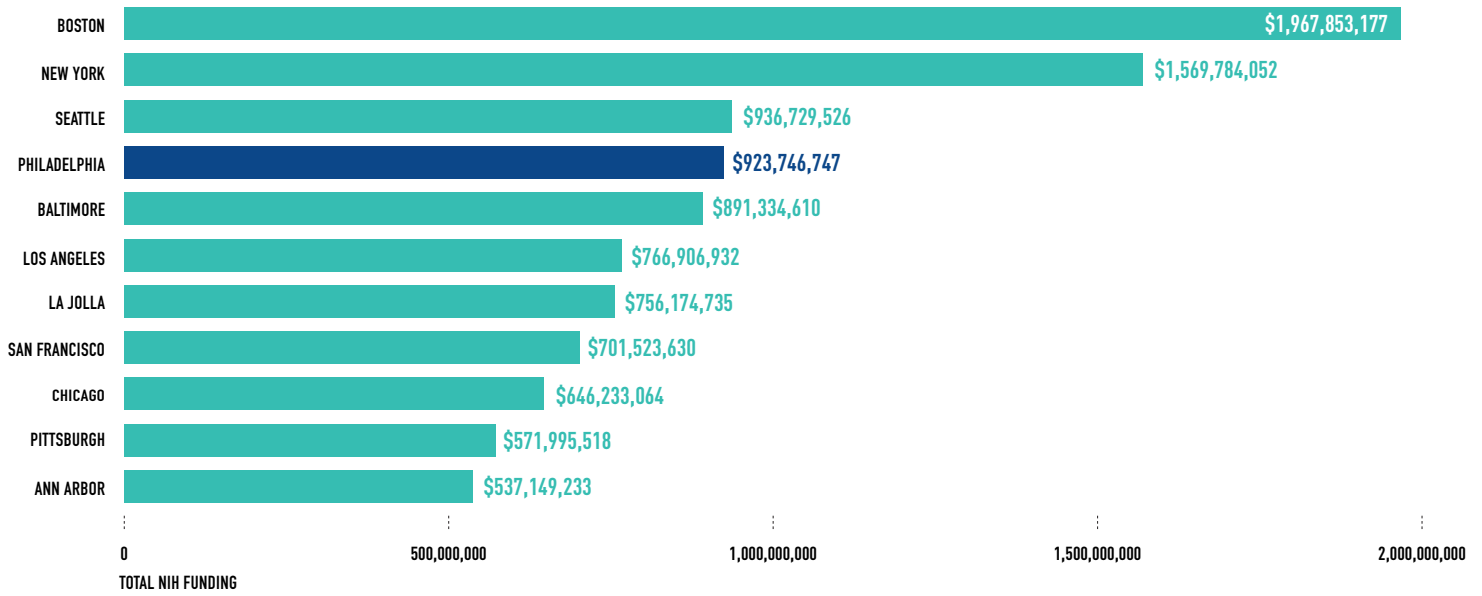


Source: Children's Hospital of Philadelphia; Drexel University; Penn Medicine; Temple University; Thomas Jefferson University; Individual Institutions



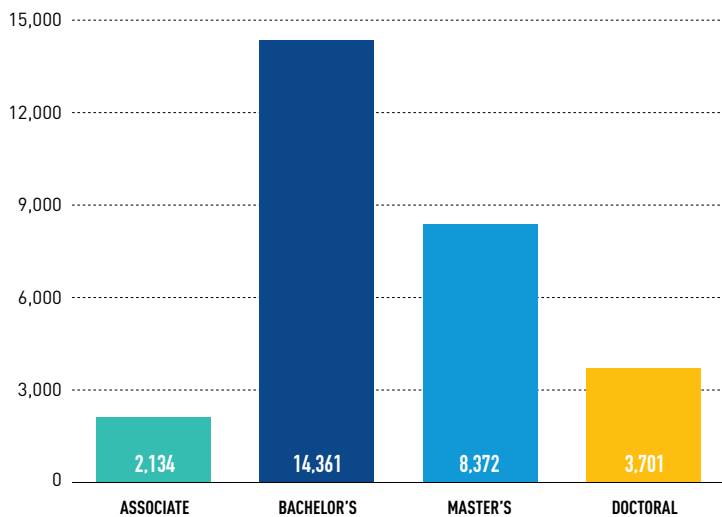
THOMAS JEFFERSON UNIVERSITY IS THE LARGEST PRIVATE EMPLOYER IN CENTER CITY WITH MOST OF ITS EMPLOYMENT CONCENTRATED EAST OF BROAD STREET. DREXEL UNIVERSITY IS EXPANDING ITS DOWNTOWN PRESENCE JUST NORTHWEST OF CITY HALL, WHILE TEMPLE, PENN AND CHILDREN'S HOSPITAL ARE EXPANDING THEIR DOWNTOWN FOOTPRINTS

NATIONAL INSTITUTES OF HEALTH FUNDING, 2017

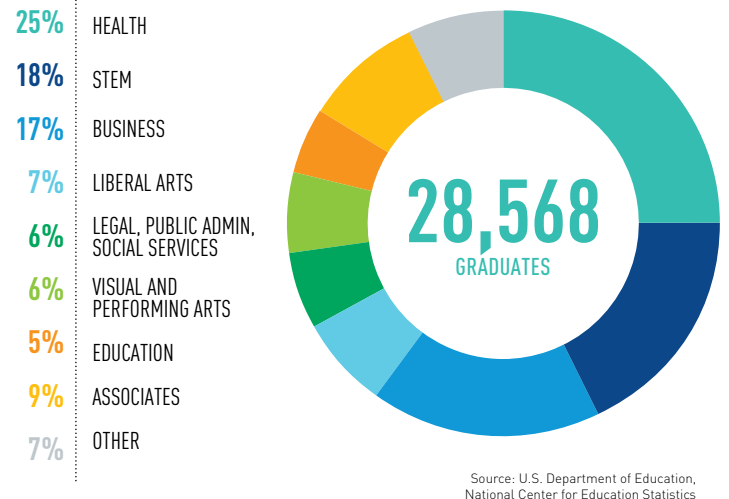


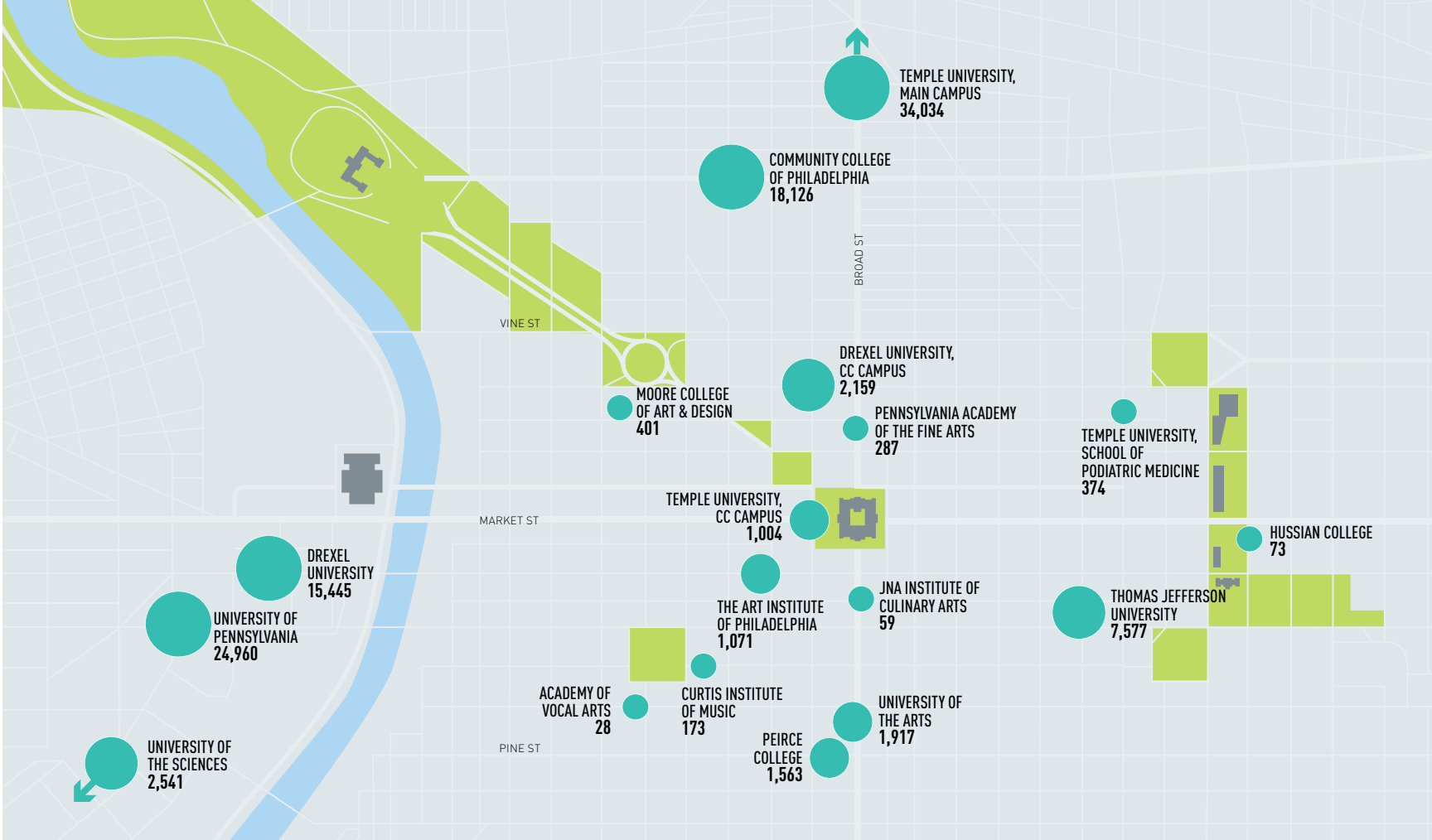
PHILADELPHIA RANKS 4TH NATIONALLY, SECURING \$924 MILLION IN NIH GRANTS IN 2017

DEGREES CONFERRED BY PHILADELPHIA COLLEGES AND UNIVERSITIES, 2016



DEGREES CONFERRED BY TYPE





HIGHER EDUCATION ENROLLMENT, FALL 2016

FALL 2016 ATTENDANCE:

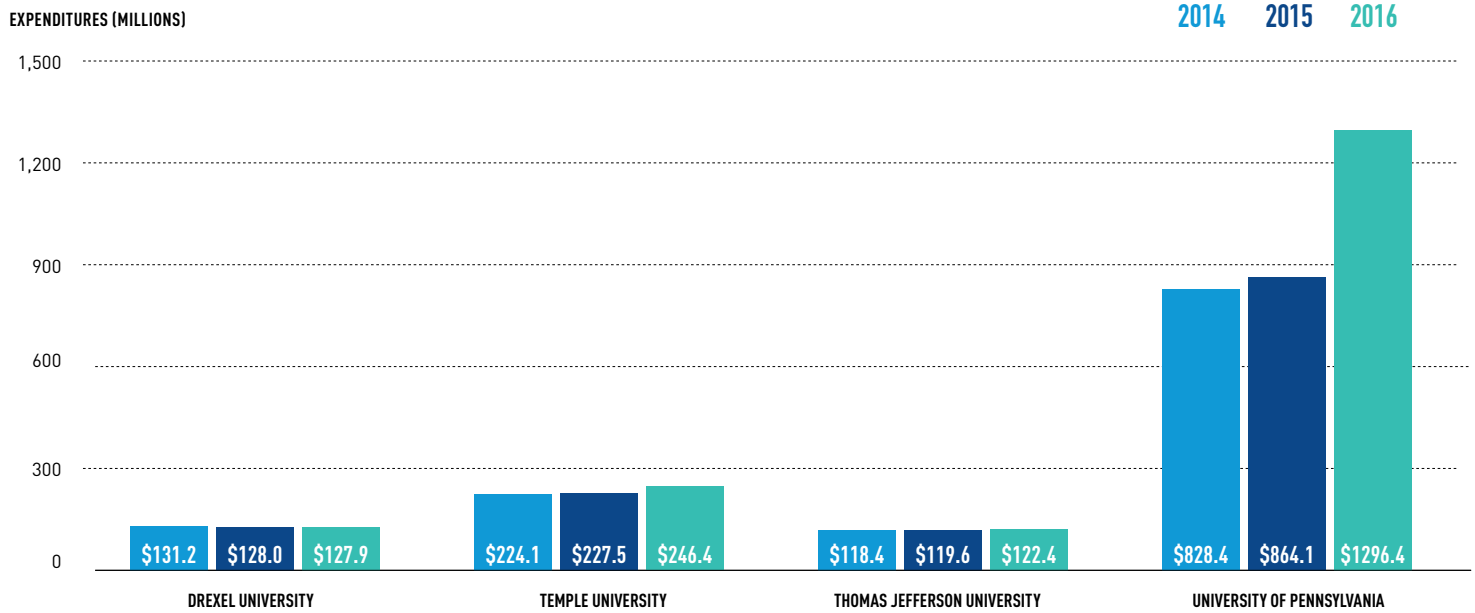


Source: National Center for Education Statistics, Integrated Postsecondary Education Data System; Temple University Fact Book 2016-2017; Drexel University, Office of Institutional Research, Assessment & Effectiveness; Pennsylvania Academy of the Fine Arts Annual Report; Thomas Jefferson University; University of Pennsylvania; University of the Sciences

112,000 STUDENTS
 ARE ENROLLED IN COLLEGES AND UNIVERSITIES
 IN AND ADJACENT TO CENTER CITY



RESEARCH EXPENDITURES AT CENTER CITY AND ADJACENT UNIVERSITIES

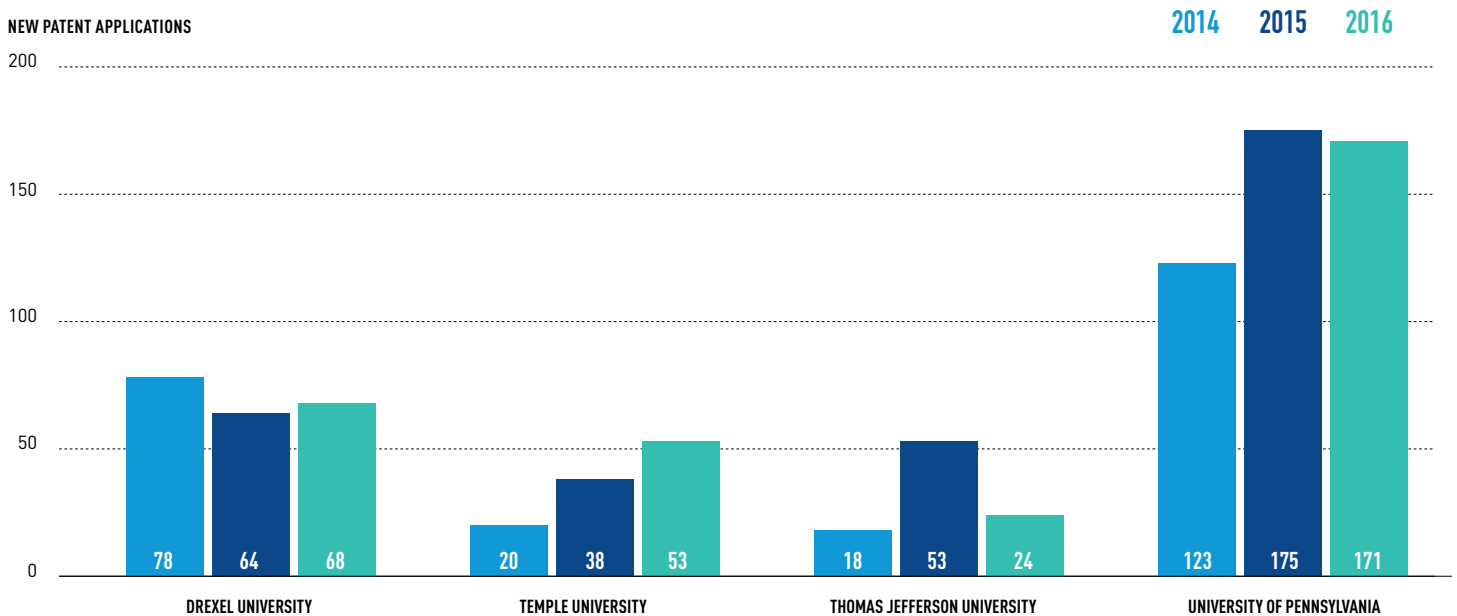


Source: National Science Foundation, National Center for Science & Engineering Statistics, Higher Education R&D Survey



TOTAL SPENDING ON RESEARCH INCREASED FROM \$1.34 BILLION IN 2015 TO \$1.79 BILLION IN 2016

NEW PATENT APPLICATIONS AT CENTER CITY AND ADJACENT UNIVERSITIES



Source: Association of Technology Managers, Licensing Activity Survey 2016