

JOHNS HOPKINS

UNIVERSITY & MEDICINE



COVER:

1. Team Hopkins at the 2019 “Race to Embrace 5k” fundraiser for the Marian House to benefit homeless women.
2. Graduation exercises at the Johns Hopkins University Homewood campus.
3. Days of Taste brings together local chefs and elementary school students in a hands-on program about healthy eating.
4. Johns Hopkins University Gilman Hall on the Homewood campus.
5. Johns Hopkins Hospital nurses on the iconic Billings Dome in Baltimore.
6. Prosthetic limb developed at the Johns Hopkins University Applied Physics Laboratory.



This report was prepared by Appleseed in partnership with the Johns Hopkins Office of Government and Community Affairs. Appleseed is a New York City-based consulting firm, founded in 1993, that provides economic research and analysis and economic development planning services to government, non-profit and corporate clients.

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Johns Hopkins

Johns Hopkins across Maryland, District of Columbia and Florida

Nearly \$13.9 billion in total economic impact in 2019 (\$12.6 billion in Maryland)

Johns Hopkins is the largest private employer both in Baltimore City and in the State of Maryland. It is also a major purchaser of goods and services, a sponsor of construction projects and a magnet for students and visitors. In keeping with the beliefs of its founder and namesake, Johns Hopkins understands that its health and well-being are inextricably tied to the physical, social and economic well-being of the community.

In fiscal year 2019, Johns Hopkins directly employed 63,844 non-student employees systemwide – in Maryland, the District of Columbia, Florida and elsewhere – and spent more than \$4.2 billion on purchases of goods and services (including construction).

Johns Hopkins' impact in Maryland, the District of Columbia and Florida

- In fiscal year 2019, Johns Hopkins and its affiliates directly and indirectly accounted for more than 102,400 jobs¹ in Maryland, including 54,623 people employed directly by Johns Hopkins at its various Maryland locations with a payroll of nearly \$4.4 billion. More than 85 percent of the 63,844 people directly employed by Johns Hopkins systemwide – in Maryland, the District of Columbia, Florida and elsewhere – worked in Maryland.

1. This figure excludes student employees.

- In addition to its 54,623 regular full- and part-time employees, Johns Hopkins employed 9,970 students at its Maryland locations in a variety of part-time jobs.
- In the spring of 2019, 53,310 regular full- and part-time Johns Hopkins employees (about 84 percent of all non-student employees) lived in Maryland.
- In fiscal year 2019, Johns Hopkins spent more than \$1.3 billion on purchases of goods and services (including construction) from companies in Maryland, directly supporting 7,700 jobs in Maryland.
- We estimate that spending in Maryland by Johns Hopkins students and visitors from out-of-state directly generated \$261.5 million in economic output in Maryland in fiscal year 2019, and 2,246 jobs in Maryland.
- Institutions affiliated with Johns Hopkins directly employed 4,185 people in Maryland in the spring of 2017. Their spending on purchasing and construction directly generated an additional 423 jobs in Maryland in fiscal year 2017.
- Through the “multiplier effect,” spending by Johns Hopkins, its employees, vendors, contractors, students, visitors and affiliated institutions indirectly generated more than \$6.3 billion in economic output in fiscal year 2019 and 33,227 jobs in Maryland.
- A significant share of the money Johns Hopkins spends on purchasing and construction is paid to minority- and women-owned businesses. In fiscal year 2019, Johns Hopkins spent \$107.2 million on goods, services and construction work provided by minority- and women-owned businesses, including nearly \$39.4 million paid to vendors and contractors in Maryland.

- Johns Hopkins withheld nearly \$282.4 million in Maryland State income taxes from the earnings of its employees in fiscal year 2019 and paid nearly \$23.3 million in taxes and fees to local governments in Maryland. This does not include usage fees such as the \$6.6 million in fees paid for water and sewer service.
- Beyond Maryland, in fiscal year 2019:



Shaffer Hall at the Johns Hopkins University Homewood campus.

- > Johns Hopkins directly employed 3,535 people (excluding students) at its various locations in D.C., with a payroll of \$209.5 million; and through payments of approximately \$88.9 million to D.C. vendors and contractors, directly supported 397 additional jobs in D.C.
- > Johns Hopkins directly employed 3,610 people at Johns Hopkins All Children's Hospital and facilities in Florida, with a payroll of nearly \$285.1 million. Through payments of nearly \$94.8 million to Florida vendors and contractors, Johns Hopkins directly supported an additional 695 jobs in Florida.
- > Approximately \$33.3 million in local spending by Johns Hopkins students enrolled at Johns Hopkins SAIS in Washington, D.C., visitors to patients at Sibley Memorial Hospital and employees who commute into D.C. directly supported 278 jobs in D.C.
- > Through the multiplier effect, spending by Johns Hopkins, its employees, vendors, contractors, students and visitors indirectly generated 733 jobs and \$159.0 million in economic output in D.C., and 2,527 jobs and \$416.1 million in economic output in Florida.
- Combining all these impacts, we estimate that in fiscal year 2019, spending by Johns Hopkins, its employees, vendors, contractors, students and affiliates in Maryland, D.C. and Florida directly and indirectly accounted for:
 - > 114,179 jobs in Maryland, D.C. and Florida, with wages and salaries totaling \$7.7 billion
 - > Nearly \$13.9 billion in economic output in Maryland, D.C. and Florida

Impact of Johns Hopkins, students, visitors and affiliates in Maryland, D.C. and Florida, FY 2019 (earnings and output in \$ millions)

	Direct spending impact		Indirect/ induced effects	Total impact
	Employment/ Payroll	Purchasing/ Construction		
Maryland				
Jobs	58,808	10,369	33,227	102,404
Wages	\$4,637.2	\$586.5	\$1,759.0	\$6,982.7
Output	\$4,637.2	\$1,663.9	\$6,300.5	\$12,601.7
District of Columbia				
Jobs	3,535	675	733	4,943
Wages	\$209.5	\$53.7	\$57.9	\$321.1
Output	\$209.5	\$122.2	\$159.0	\$490.7
Florida				
Jobs	3,610	695	2,527	6,832
Wages	\$285.1	\$36.3	\$111.6	\$433.0
Output	\$285.1	\$94.8	\$416.1	\$796.0
TOTAL				
Jobs	65,953	11,738	36,488	114,179
Wages	\$5,131.8	\$676.4	\$1,928.5	\$7,736.8
Output	\$5,131.8	\$1,880.9	\$6,875.6	\$13,888.3

Johns Hopkins' impact in Baltimore

- In fiscal year 2019, Johns Hopkins and its affiliates directly and indirectly accounted for 60,710 jobs in Baltimore² – a total equivalent to about one out of every five private sector wage-and-salary jobs in the City. This total included 40,564 people employed directly by Johns Hopkins at its various locations in Baltimore. More than 63 percent of the 63,844 people directly employed by Johns Hopkins systemwide – in Maryland, the District of Columbia, Florida and elsewhere – worked in Baltimore.
- In addition to its 40,564 regular full- and part-time employees in Baltimore, Johns Hopkins employed 9,733 students in a variety of part-time jobs at its Baltimore locations.
- Of the 63,844 non-student employees who worked for Johns Hopkins in the spring of 2019 (both in Baltimore and elsewhere), 17,005 – about 27 percent of all non-student employees – were residents of Baltimore.
- Wages and salaries (excluding wages paid to student employees) paid by Johns Hopkins to Baltimore residents in fiscal year 2019 totaled nearly \$1.2 billion.

2. This figure excludes student employees.



The Johns Hopkins Hospital Billings Dome at night.

- In fiscal year 2019, Johns Hopkins spent \$600.6 million³ on purchases of goods and services (including construction) from companies in Baltimore, directly supporting approximately 3,332 jobs.
- We estimate that spending in Baltimore by Johns Hopkins employees who commute into the City, students and visitors from outside the City directly generated \$391.0 million in economic output in the City in fiscal year 2019, and 3,428 jobs.
- Institutions affiliated with Johns Hopkins directly employed 4,185 people in Baltimore in the spring of 2017. Their spending within the City on purchasing and construction directly generated an additional 257 jobs in Baltimore in fiscal year 2017.
- Through the “multiplier effect,” spending by Johns Hopkins, its affiliates, its employees, vendors and contractors, students and visitors, indirectly generated nearly \$1.8 billion in economic output in fiscal year 2019 and created 8,944 jobs in Baltimore.
- Johns Hopkins paid nearly \$17.2 million in taxes and fees to the City in fiscal year 2019. This does not include usage fees such as the \$6.6 million paid for water and sewer usage.
- In fiscal year 2019, Johns Hopkins withheld nearly \$282.4 million in state and local income taxes from the earnings of its employees. We estimate that the local share of income taxes paid to Baltimore City from the earnings of Johns Hopkins employees living in the City totaled approximately \$20.7 million.
- Under the terms of an agreement that in 2016 was renewed for ten years, Johns Hopkins also makes an annual voluntary contribution to the City. In fiscal year 2019, this voluntary payment totaled \$3.26 million.

3. This total is much larger than that cited for HopkinsLocal because it covers a much wider range of payments (including, for example, rent payments, utilities and insurance) to entities throughout the City.

**Impact of Johns Hopkins, students, visitors, and affiliates in Baltimore, FY 2019
(earnings and output in \$ millions)**

	Direct spending impact		Indirect/ induced effects	Total impact
	<i>Employment/ Payroll</i>	<i>Purchasing/ Construction</i>		
Johns Hopkins				
Jobs	40,564	3,332	7,469	51,364
Wages	\$3,102.9	\$205.8	\$427.9	\$3,736.6
Output	\$3,102.9	\$600.6	\$1,515.6	\$5,219.1
Affiliate spending				
Jobs	4,185	257	644	5,087
Wages	\$264.0	\$17.8	\$36.3	\$318.1
Output	\$264.0	\$47.0	\$129.9	\$440.9
Commuter spending				
Jobs	–	746	148	894
Wages	–	\$25.7	\$8.9	\$34.6
Output	–	\$68.9	\$25.2	\$94.1
Student spending				
Jobs	–	1,302	356	1,658
Wages	–	\$36.4	\$21.2	\$57.7
Output	–	\$198.4	\$60.4	\$258.8
Visitor spending				
Jobs	–	1,380	328	1,708
Wages	–	\$55.1	\$19.8	\$74.9
Output	–	\$123.7	\$55.3	\$178.9
TOTAL				
Jobs	44,749	7,017	8,944	60,710
Wages	\$3,366.9	\$340.8	\$514.1	\$4,221.8
Output	\$3,366.9	\$1,038.5	\$1,786.4	\$6,191.9



Graduation exercises at the Johns Hopkins University Homewood campus.

Educating students and cultivating lifelong learning

During the spring of 2019, 24,782 students were enrolled in for-credit programs at Johns Hopkins, including 5,390 undergraduates and 19,392 graduate and professional students. About 10.4 percent of all undergraduates were residents of Maryland, including 3.2 percent who were residents of Baltimore. About 27.6 percent of all graduate and professional students were Maryland residents, including 11.1 percent who were residents of Baltimore.

- In fiscal year 2019, Johns Hopkins provided more than \$86.5 million in financial aid from University sources to students who identified themselves as Maryland residents, including nearly \$56.9 million provided to students who identified themselves as residents of Baltimore.
- In 2018-2019, Johns Hopkins awarded 1,389 undergraduate degrees and 7,284 graduate, professional and medical degrees. Approximately 24.0 percent of all undergraduate degrees were awarded to Maryland residents (including 18.2 percent to Baltimore residents), and 35.4 percent of all graduate, professional and medical degrees were awarded to Maryland residents (including 20.6 percent of Baltimore residents). Additionally, 865 certificates were awarded, including 378 (43.7 percent of the total) awarded to Maryland residents.



University students provide one-on-one help in reading and math as part of the Johns Hopkins Tutorial Project.

- In fiscal year 2019, 80,678 Johns Hopkins graduates (32.9 percent of all living alumni) lived in Maryland, including 18,488 (7.5 percent) who lived in Baltimore.
- During the past few years Johns Hopkins has introduced new undergraduate degree programs in areas that are well-aligned with opportunities for growth in Maryland's economy. Examples include:
 - > A new, interdisciplinary undergraduate major in medicine, science and the humanities
 - > A Peabody Institute bachelor's degree in music for new media
 - > At the Whiting School of Engineering, a concurrent bachelor's/master's degree in security informatics
 - > An MS in bioinformatics, offered jointly by the Krieger School of Arts and Sciences and the Whiting School of Engineering
 - > A new master's degree in health care systems engineering, first offered by the Whiting School in the spring of 2019
 - > The Johns Hopkins-MedImmune Scholars Program, in which PhD students in the Whiting School's biomedical engineering program and in the School of Medicine's graduate education program gain experience in research and drug discovery and development while working at Gaithersburg-based MedImmune, one of Maryland's leading biopharmaceutical companies

- > A new Doctor of Engineering program, designed for full-time working professionals. The program was developed by Whiting School faculty in collaboration with scientists and engineers at the Applied Physics Lab and several leading Maryland companies
- > A new track in nurse anesthiology in the School of Nursing's Doctor of Nursing Practice program
- Part-time graduate programs – such as the Whiting School's Engineering for Professionals program and the Krieger School of Arts and Sciences Advanced Academic Programs – are particularly important for the continued growth of knowledge-based industries in Maryland. In the spring of 2019, 3,188 Maryland residents, including 795 Baltimore residents – the great majority of them working adults – were enrolled part-time in graduate programs at Johns Hopkins.
- The Baltimore Scholars Program provides scholarships covering the full cost of attendance at Johns Hopkins for graduates of Baltimore City public high schools from families with incomes below \$80,000 who are accepted as full-time undergraduate students at the University. Since the program's inception in 2005, the Baltimore Scholars Program has awarded (including future-year commitments to currently enrolled students) \$31.6 million in financial assistance to 358 Johns Hopkins undergraduates. In 2018-2019, 58 undergraduates actively participated in the program.
- In 2016 Johns Hopkins joined twelve other independent colleges and universities in Maryland in a commitment to match grants the State provides to low-income students attending these institutions. Through this Maryland Guaranteed Access Partnership, students from Maryland families with incomes below 130 percent of the federal poverty level (\$32,630 as of 2018) who maintain a GPA of at least 2.5 are eligible for up to \$38,200 in combined state and University financial aid annually, for up to four years.
- In November 2018, University President Ron Daniels announced that Johns Hopkins was adopting a policy of “need-blind” admissions, ensuring that an undergraduate education at Johns Hopkins will be within reach of all qualified, high-achieving students regardless of their ability to pay. This new policy – which will substantially increase the amount of financial aid provided by the University and eliminate loans from University financial aid packages – was made possible by a \$1.8 billion gift from alumnus Michael Bloomberg.
- Johns Hopkins is also expanding access to its academic programs by offering an ever-growing array of courses and degree programs online. Graduate programs now available entirely online include:
 - > 21 master's degree programs in the Krieger School of Arts and Sciences
 - > 19 master's degrees in the Whiting School of Engineering
 - > Six master's degrees in the Bloomberg School of Public Health
 - > The Carey Business School's Flexible MBA program
 - > Three doctoral programs – in Education, Nursing and Public Health



Designed and built by APL – with contributions from research institutions and companies around the world – the MESSENGER spacecraft tackled the challenges associated with orbiting Mercury.

- In 2018-2019, a total of 13,827 students were enrolled in for-credit, online graduate and professional courses. In addition to these for-credit programs, millions of students worldwide have since 2014 participated in “massively open online courses” (MOOCs) offered by the Bloomberg School of Public Health.

Research that drives economic growth

Johns Hopkins consistently ranks first in research spending among all U.S. universities, by a wide margin. During fiscal year 2019, externally-funded spending at Johns Hopkins on research and related programs totaled nearly \$3.4 billion. Research and related spending rose by \$553.4 million between fiscal year 2014 and fiscal year 2019 – an increase of 19.5 percent.

- Almost all of this spending is financed from sources outside Maryland. State and local government funds accounted for 0.6 percent of all research and related spending at Johns Hopkins in fiscal year 2019.
- Johns Hopkins' ability to sustain the continued growth of its research enterprise in an era of federal budgetary constraints is in part a consequence of recent investments by the University in its ability to compete successfully for federal funds.
 - > Discovery Awards, launched in 2015, provide up to \$100,000 to cross-divisional teams of researchers for early-stage work in new areas. Grants of up to \$150,000 are also available for work aimed at preparing specific proposals to federal or other funding sources. Teams must include faculty members and other researchers from at least two Johns Hopkins divisions. From 2015 through 2019, Discovery funds have been awarded to 135 cross-divisional teams.
 - > Catalyst Awards, also launched in 2015, provide grants of up to \$75,000 to early-career faculty to support promising new research or creative work. From 2015 through 2019, 170 young faculty members have received Catalyst Awards.
 - > Established in 2015, the President's Frontier Award provides one \$250,000 competitive research grant each year to a Johns Hopkins faculty member whose scholarship shows exceptional potential for important future work.

An analysis by Johns Hopkins on the impact of Catalyst and Discovery awards found that through fiscal year 2017 they had generated \$9.16 in increased federal and other external research funding for every dollar of University funds invested – powerful evidence of the impact of carefully targeted investment in early-stage research, and in the work of young investigators. Catalyst Awards, with a return of \$12.10 for every dollar invested, proved to be especially productive.

- The success of Johns Hopkins as a research institution is built in part on its ability to respond quickly to emerging research needs and opportunities across a wide range of areas. The following are just a few recent examples.
 - > The University's 21st Century Cities Initiative, launched in 2013, seeks to understand and solve the economic, social, educational, safety and housing inequities that many cities are struggling to address. Its principal focus is on applied research projects that can yield actionable results in six to 18 months.
 - > Through nine Precision Medicine Centers of Excellence (as of the summer of 2019), the University and the Health System are working to develop new, individualized approaches to the prevention, diagnosis and treatment of a widening array of diseases.

- > In 2016 the Whiting School of Engineering launched the Malone Center for Engineering in Healthcare. A focal point for collaboration among engineers, clinicians and School of Medicine faculty, the Center is “leveraging data analytics in novel ways...pioneering new technologies and applying systems engineering principles to speed the development of research-based innovations that will enhance the efficiency, effectiveness and consistency of health care.”
- > In 2016, Bloomberg Philanthropies marked the 100th anniversary of the Johns Hopkins Bloomberg School of Public Health by committing \$300 million to a new Bloomberg American Health Initiative, an effort to improve the nation’s health by strengthening public health research, education and practice. The Initiative focuses on five key areas: addiction, environmental challenges, obesity and the food system, risks to adolescent health and violence.
- > In 2017, Johns Hopkins – with a commitment of \$150 million from the Stavros Niarchos Foundation – launched the Agora Institute. The new Institute, part of the Krieger School of Arts and Sciences, conducts cross-disciplinary research on the causes and dynamics of social, cultural and political polarization in the U.S. and elsewhere. It is seeking to develop ways to improve public discourse and decision-making, and new approaches to resolving especially divisive policy issues.
- > In 2019 the University announced creation of a new Center for Safe and Healthy Schools, led by the Johns Hopkins School of Education. The Center will conduct research on school health and safety, school security and school-community engagement. It will also offer online courses on these topics, and provide seed grants for innovative projects.
- With contract revenues of more than \$1.5 billion in fiscal year 2018, the Applied Physics Laboratory (APL) in Laurel, Maryland is one of the largest university-affiliated research centers in the United States, and Howard County’s largest private employer. APL’s work encompasses research on national security problems, the development and testing of new defense technologies, information security, the planning and management of major space missions for NASA, and the development of innovative medical devices. Notable developments since 2014 have included:
 - > Creation of APL’s Intelligent Systems Center, drawing on the Lab’s expertise in robotics, machine learning, neuroscience and other fields to accelerate the development and deployment of “autonomous systems.”
 - > Development of a framework for the integration of multiple cybersecurity systems (IACD – Integrated Adaptive Cyber Defense). With several partners, APL is now working on deployment of IACD in the financial services sector.
 - > In 2015, the historic flyby of Pluto by NASA’s New Horizons space probe, built and managed by APL; and the development and 2018 launch of NASA’s Parker Solar Probe, which is flying closer to the sun than any previous spacecraft – also built and managed by APL.



Researcher at the Infectious Diseases lab.

- > Development of portable technologies for low-cost production of vaccines and other therapeutics in remote areas under adverse conditions.
- > A contract from the Centers for Disease Control in 2017 for continued development and maintenance of ESSENCE, a web-based surveillance system that collects and analyzes a wide range of data from diverse non-traditional sources to provide early indicators at the local community level of potential disease outbreaks and other emerging bio-threats.
- Other Johns Hopkins research centers in Maryland (in addition to those in Baltimore) include, for example:
 - > The Bloomberg School of Public Health's Comstock Center for Public Health Research and Prevention, Hagerstown, which since 1921 has been conducting large-scale, long-term studies of cardiovascular risk, cancer and other public health issues among residents of Washington County.

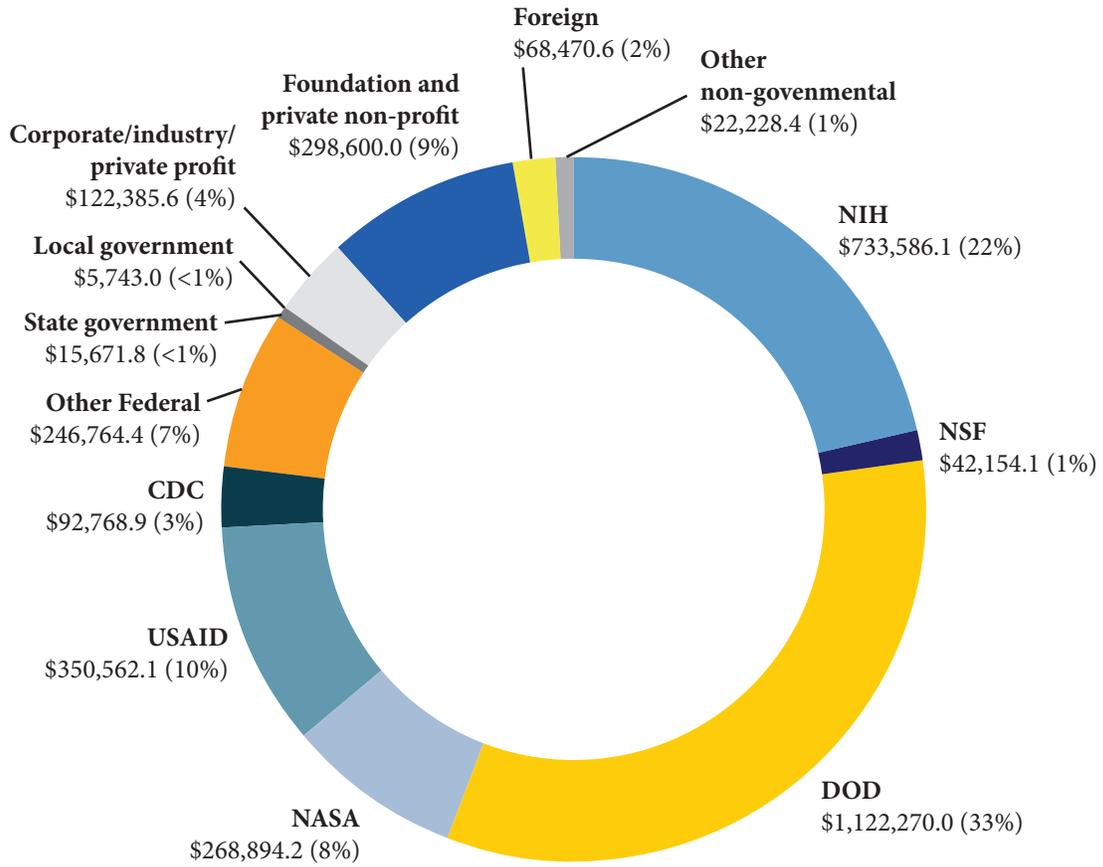
- > The Whiting School of Engineering's Advanced Engine and Rocket Fuels Lab, Columbia, which for more than 70 years has been providing research on liquid-fuel propulsion systems to federal agencies, industry and academic experts.
- The platform that Johns Hopkins provides within a single, integrated enterprise for collaboration across disciplines and among scientists, engineers, clinicians and other professionals is one of its greatest strengths as a research institution. This strength is exemplified by the University's Bloomberg Distinguished Professorships, 50 new faculty positions established in 2014 with a \$250 million gift from alumnus Michael Bloomberg. As of the spring of 2019, 46 of these positions – which are focused on interdisciplinary research, teaching and service – have been filled, with the rest scheduled to be filled in the next few years. The Bloomberg Professorships have already enhanced the University's ability to attract leading scholars, as well as external research funding.

Computing power for a data-driven economy

The Maryland Advanced Research Computing Center (MARCC, pronounced "MAR-see") is a shared facility of the Johns Hopkins University and the University of Maryland College Park, located on the Johns Hopkins Bayview Medical Center campus in Baltimore. With \$27.1 million in financing provided by the Maryland Legislature, construction of the new computing center was completed in 2015.

Since its opening, MARCC has provided Johns Hopkins and University of Maryland faculty members, staff, students and post-docs with a level of computing power that had previously not been available within the State. It enables researchers to apply the methods and tools of "big data" to a wide range of problems across a wide range of disciplines; and to do so much more quickly and at lower cost than they ever could before. From its opening through June 2017, MARCC had supported approximately 250 research projects involving 500 university faculty and staff, 1,000 graduate students and 200 undergraduates. Recognizing the role the facility plays in major research projects, the NSF in 2019 awarded MARCC a \$4 million Major Instrumentation Grant.

Johns Hopkins research and related spending by source of funding, FY 2019 (in \$000s)





Care-A-Van provides free, accessible medical care primarily for women and children in the community.

Improving the health of the community

Johns Hopkins is a leading source of high-quality health care for residents of Baltimore and other Maryland communities. For the past several years, Johns Hopkins has steadily expanded the range of services it provides in Maryland, grown the number of State residents its health plans cover, and increased the number of visits by Maryland residents to Johns Hopkins providers. Johns Hopkins has also extended its mission to communities outside the State as well – especially to the District of Columbia and to West Central Florida.

- Through Johns Hopkins Health System’s six hospitals, through other subsidiaries of the Johns Hopkins Health System, through Johns Hopkins School of Medicine faculty physicians and Johns Hopkins School of Nursing faculty and nurse practitioners, in fiscal year 2019, the Johns Hopkins Health System handled more than 4.0 million patient visits – a 13.9 percent increase in patient visits since fiscal year 2014.
- During fiscal year 2019, the Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, Howard County General Hospital, Suburban Hospital and Sibley Memorial Hospital provided inpatient care to 92,403 Maryland residents, including 22,262 who lived in Baltimore City.

- In fiscal year 2019, clinics at or operated by the Health System's hospitals reported a total of 1,332,882 outpatient visits involving Maryland residents (including 480,685 visits involving Baltimore residents), and 200,036 emergency room visits involving Maryland residents (including 66,122 visits by Baltimore residents). In addition to these services:
 - > Johns Hopkins faculty physicians reported a total of 618,837 outpatient visits by Maryland residents (including 113,797 by Baltimore residents).
 - > The 36 primary and specialty care centers operated by Johns Hopkins Community Physicians reported a total of 872,542 patient visits by Maryland residents (including 141,422 by Baltimore residents).
- In fiscal year 2019, Johns Hopkins Home Care Group provided home health services to 67,060 Maryland residents (including 14,333 Baltimore residents), 3,037 D.C. residents, and 9,061 patients living outside of Maryland and D.C. In addition, Potomac Home Health Care – a non-profit joint venture of Sibley Memorial Hospital and Suburban Hospital – provided home care services to 2,646 residents of Maryland, and 827 D.C. residents.
- In fiscal year 2019, managed care plans administered by Johns Hopkins HealthCare (JHHC) provided comprehensive health care coverage to 74,770 Baltimore residents – about 12.2 percent of the City's total population. Statewide (including Baltimore), JHHC provided comprehensive coverage to 410,965 residents of Maryland – about 6.8 percent of the State's total population. In addition, 865 D.C. residents were enrolled in JHHC plans during fiscal year 2019.

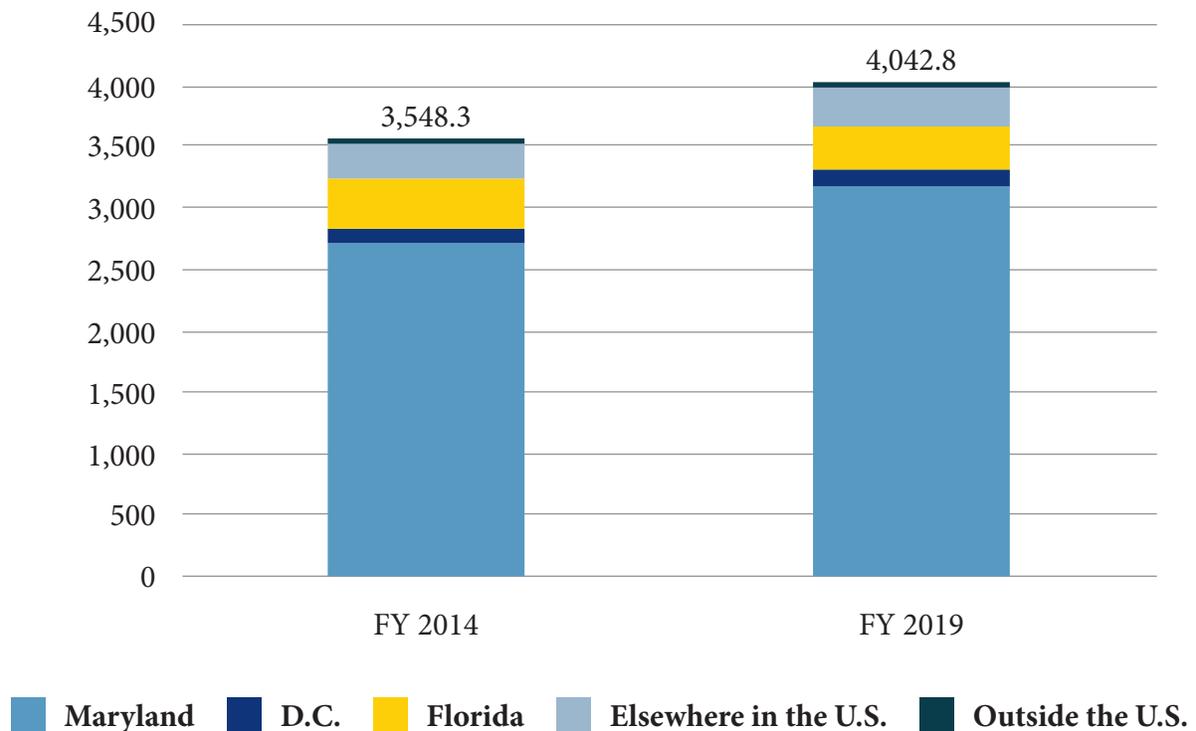


A young patient at the Johns Hopkins All Children's Hospital in St. Petersburg, FL.

- Outside of Maryland, other facilities that are part of the Johns Hopkins Health System also provide essential health services to residents of their respective communities:
 - > During fiscal year 2019, Sibley Memorial Hospital, located in Washington, D.C., provided inpatient care to 7,740 D.C. residents, and reported a total of 45,943 outpatient visits and 21,376 emergency room visits involving D.C. residents.

- > The two primary and specialty care centers operated in D.C. by Johns Hopkins Community Physicians reported a total of 26,531 visits in fiscal year 2019. In total, Johns Hopkins Community Physicians reported a total of 27,939 patient visits involving D.C. residents in fiscal year 2019.
- > Johns Hopkins All Children’s Hospital, located in St. Petersburg, Florida, provided inpatient care to 6,159 Florida residents, and reported a total of 175,511 outpatient visits and 45,269 emergency room visits involving Florida residents in fiscal year 2019.
- > In addition to its hospital-based outpatient services, Johns Hopkins All Children’s Hospital’s 10 regional Outpatient Care Centers reported a total of 126,271 outpatient visits by Florida residents in fiscal year 2019.
- During the past few years, Johns Hopkins has undertaken major investments in its hospitals and outpatient clinics, including:
 - > A new 158-bed inpatient building and expansion and modernization of other facilities at Johns Hopkins Bayview Medical Center, to be completed in 2024 at a cost of \$469 million

Total patient visits at Johns Hopkins entities, by residence of patient, FY 2014 – FY 2019 (in thousands)



- > The Skip Viragh Outpatient Cancer Building, a \$100 million, 184,000-square-foot cancer diagnostic and treatment facility at the Johns Hopkins Hospital – a unit of the Kimmel Cancer Center – completed in 2018
- > A 300,000-square-foot expansion of its facilities at Suburban Hospital, to be completed in 2020
- > In 2018, opening a new branch of the Armstrong Institute for Quality and Patient Safety at Howard County General Hospital – the first Armstrong Institute center to be located in a community hospital
- > Sibley Memorial Hospital’s new, \$200 million proton therapy center, opened in October 2019
- > Construction of a new research and education building at Johns Hopkins All Children’s Hospital, opened in 2018
- > A 110,000-square-foot expansion of the Johns Hopkins Health Care and Surgery Center at Green Spring Station

These and other investments will help ensure that Johns Hopkins stays at the leading edge of health care quality, access and innovation, in Maryland and beyond.

Impacts around the globe

Over the past two decades, Johns Hopkins has increasingly extended its impact to every corner of the world. The Johns Hopkins Health System provides leading-edge services to patients and families from nearly 190 countries and works with local partners on six continents to raise the standard of health care. The University conducts research in 110 countries, and helps prepare its students to live and work in an increasingly integrated world. The following are just a few examples of Johns Hopkins’s global reach.

- Jhpiego, a Johns Hopkins organization based in Baltimore, is a world leader in the development and deployment of innovative approaches to improving the health of women and their families in low-income communities around the world. From \$39.5 million in fiscal year 2003, Jhpiego’s revenues have grown to \$407.6 million in fiscal year 2018.
- As of 2018, Johns Hopkins International (JHI) – the international arm of Johns Hopkins Medicine – was working with partner institutions and organizations in North and South America, Africa, Asia and the Middle East to strengthen the delivery of health care. In Saudi Arabia, for example, Johns Hopkins Aramco Health Care, a joint venture established in 2013, combines Johns Hopkins Medicine’s expertise in clinical care, research and education with the health care delivery system operated by Saudi Aramco (a major oil producer) for its employees in Saudi Arabia and their families – a total of 350,000 people.



Students from the Carey Business School's Global MBA program pose with Rwandan villagers during a project abroad.

- Johns Hopkins is also a leader in preparing students to live and work in an increasingly integrated world – through the degree programs offered by the D.C.-based Paul H. Nitze School of Advanced International Studies, the Carey Business School's Global MBA program, programs in global health and others. At the undergraduate level, the University's Office of Study Abroad estimates that more than 40 percent of all Johns Hopkins undergraduates participate in some type of study outside the U.S before graduation.
- Johns Hopkins conducts research in Europe, Asia, the Middle East, Africa and Latin America in fields as diverse as anthropology, international studies, public health, environmental science and national security. In fiscal year 2019, about 12.4 percent of all University research activity (as measured by spending) occurred outside the U.S. Of particular note, the Bloomberg School of Public Health was as of 2019 operating in 59 countries on six continents. This expanding global knowledge base – and the network of relationships developed in the course of building it – can be a valuable source of future economic growth.



FastForward innovation hub at 1812 Ashland Avenue.

Fueling the growth of Maryland's innovation economy

During the past five years, Johns Hopkins has significantly expanded its commitment to support translation of the intellectual and human capital developed at Johns Hopkins into new products and services, new businesses and new jobs. This effort is already showing results.

- Under its “FastForward” brand, Johns Hopkins Technology Ventures has since 2015 opened four facilities totaling 44,200 square feet – two in East Baltimore and two near the University’s Homewood Campus – that provide co-working, office and lab space, support services and access to equipment for Johns Hopkins-based start-ups. Two of these facilities focus on supporting student start-ups, and two serve commercial start-ups.
- The University offers a growing array of programs aimed at helping students discover and develop their talents as innovators and entrepreneurs. They include:

- > An undergraduate minor in entrepreneurship and management through the Whiting School of Engineering's Center for Leadership Education
 - > A nine-course undergraduate design team program, offered through the Center for Bioengineering Innovation and Design (CBID), a joint center of the Whiting School and the School of Medicine
 - > A one-year CBID master's degree in bioengineering innovation and design
 - > The Carey Business School's "flexible MBA" in entrepreneurship
 - > Johns Hopkins Technology Ventures' "boot camps" for aspiring technology entrepreneurs
 - > The University's Social Innovation Lab, providing training, space, support services and funding to both University and community-based social entrepreneurs
 - > The annual Johns Hopkins Business Plan Competition, hosted by the Whiting School of Engineering's Center for Leadership Education
- In addition to the resources made available by Johns Hopkins Technology Ventures, several other divisions within the University and Johns Hopkins Health System have emerged as important sources of support for innovation and entrepreneurship in Maryland.
 - > Central Spark is an innovation center for APL scientists, engineers and staff, providing space for collaboration, design work, maker space, training facilities and media resources. Perhaps most important, it provides space, time and freedom to develop and test new ideas relevant to the Lab's work – especially ideas that bridge the multiple domains across which the Lab works.
- > Sibley Memorial Hospital's Innovation Hub, opened in 2014, provides 6,000 square feet of dedicated space, support staff and equipment, all devoted to helping clinicians, staff and others (including patients' family members and community residents) work through and develop their ideas for new products, new services and new procedures that have the potential to enhance the quality and reduce the cost of health care, especially in community hospital settings.
 - > The University's Montgomery County Campus provides space for life sciences and other technology start-ups, small companies and non-profit research organizations. As of mid-2019, the Campus was home to 23 different companies and organizations.
 - > Johns Hopkins Medicine's Technology Innovation Center (TIC), established in 2014, is "a hub for clinicians to create novel technology-based solutions that span our medical specialties and practice settings." TIC works with practitioners to understand specific clinical problems, and to design technology solutions. Clinical-technical teams that make significant progress toward developing new technology solutions with commercial potential are eligible to participate in Hexcite, TIC's 16-week pre-accelerator program, aimed at bringing participating teams to the point where they are ready to create a company.

- > TIC has also worked with teams of Johns Hopkins researchers and clinicians to realize the potential of precision medicine, science that combines individual patient data with family history, demographic, environmental and lifestyle data to develop new approaches to diagnosis and treatment that are tailored to each patient's needs. Based on the work of these teams, Johns Hopkins Medicine has as of 2019 established eight Precision Medicine Centers of Excellence dealing with diseases such as prostate, bladder and pancreatic cancer, multiple sclerosis and neurofibromatosis. By the end of 2019, the number of centers is expected to increase to 16.
- > Johns Hopkins HealthCare Solutions, a division of Glen Burnie-based Johns Hopkins HealthCare (JHHC), provides a home for new ventures having shown potential for contributing to JHHC's goals of expanding access to care, improving its quality, increasing efficiency and reducing costs.

In 2019, Johns Hopkins Technology Ventures' Technology Transfer group processed 443 reports of invention, secured 147 new U.S. patents and executed 116 new agreements. The office also consulted with dozens of inventors to analyze the market for, plan the development of and secure funding for early stage technologies.





Community playground at Eager Park in Baltimore.

- Since 2010, a growing number of start-up companies have been launched in Baltimore and elsewhere in Maryland by Johns Hopkins faculty members or alumni, by former APL employees, or based on technologies first developed at Johns Hopkins. Increasingly, these companies are attracting attention from both regional and national venture capital and private equity firms. From January 2017 through June 2019, such firms announced new investments totaling approximately \$733 million in Maryland-based start-ups with ties to Johns Hopkins.

Building healthy communities together

- Since 2003, Johns Hopkins has worked with the City, the State, the Annie E. Casey Foundation, East Baltimore Development Inc. (EBDI), Forest City Science and Technology, residential developers and other partners to support redevelopment of Eager Park, an 88-acre neighborhood adjacent to its East Baltimore campus. Through fiscal year 2019 Johns Hopkins has committed more than \$51 million to this effort. Support from Johns Hopkins has to date included:
 - > Capital funding for construction of the Henderson Hopkins School, development of public open space and other projects

- > Serving as an anchor tenant for 450,000 square feet of new life sciences research and office space
- > Through rents paid by its students, indirectly supporting the development of 320 units of graduate student housing
- > Supporting development of the neighborhood's first new owner-occupied housing through its Live Near Your Work program (described below)
- > Since 2014, providing \$800,000 annually in operating funds to EBDI
- > Providing 152 Live Near Your Work Grants to Johns Hopkins employees who have bought homes in the HCPI area near the Homewood campus
- > \$800,000 in operating support for the Central Baltimore Partnership
- > Neighborhood commercial revitalization initiatives, such as the Waverly Main Street and North Avenue improvement strategies

Major milestones since 2014 have included:

- > Completion of a new, 225,000-square-foot State Health Department lab in 2015
- > In 2016, completion of 1812 Ashland Avenue – a 170,000-square-foot life sciences building anchored by Johns Hopkins Technology Ventures
- > In 2016, the opening of Eager Park, a five-acre park that provides a new focal point for the neighborhood
- > In 2017, the opening of the new 194-room Marriott Residence Inn at Johns Hopkins
- > In 2017, completion of 49 units of market-rate, owner-occupied housing
- Under the Homewood Community Partners Initiative (HCPI) Johns Hopkins has committed \$10 million to a series of projects in areas such as elementary and secondary education, housing, commercial development and quality-of-life improvements – aimed at strengthening the neighborhoods that surround the University's Homewood campus. Examples of projects supported with University funds during HCPI's first eight years have included:
 - > Renovation of, and introduction of new programs at, the Margaret Brent and Barclay schools
 - In addition to its cash contributions, Johns Hopkins has used lease agreements to support \$173 million in new private investments in the HCPI area – such as Remington Row, a \$40 million mixed-use project that includes a JHCP primary care center, and the \$18.5 million renovation of the Center Theater, now the home of a joint Johns Hopkins-MICA film program.
 - Johns Hopkins seeks to strengthen neighborhoods through its Live Near Your Work (LNYW) program, which provides grants to encourage Johns Hopkins employees to purchase homes near its principal locations in Baltimore. From fiscal year 2009 through the fiscal year 2019, over 1,100 homebuyers employed by Johns Hopkins (including the 152 cited above who bought homes in the HCPI area) received LNYW grants totaling \$11,622,000 – an average of approximately \$10,400 per homebuyer – of which \$8.2 million was contributed by Johns Hopkins, along with \$3.3 million provided by the City and the Rouse Foundation.



Sibley Memorial Hospital's Club Memory members and staff participate in the Walk to End Alzheimer's.



Howard County Hospital employees volunteer at a food pantry during National Nurses Week.

- Like other not-for-profit hospitals, the six Johns Hopkins Health System hospitals are required by the federal government to track and report annually on the benefits they provide to their local communities, such as charity care, health education programs, support for community organizations and participation in local community improvement projects. For fiscal year 2018, the community benefits provided by all six health system hospitals totaled nearly \$468.4 million.
 - > The community benefits provided by the four JHHS hospitals located in Maryland – Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, Howard County General Hospital and Suburban Hospital – were valued at more than \$404.4 million.
 - > The community benefits provided in D.C. by Sibley Memorial Hospital in fiscal year 2018 were valued at \$20.6 million, and those provided by Johns Hopkins All Children's Hospital in Florida at nearly \$43.4 million.

- In 2019 Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center and eight other Baltimore hospitals launched a new initiative that aims to provide stable housing, health care and supportive services for 200 individuals and families who are homeless or at risk of becoming homeless. In addition to housing, the program will teach its clients independent living skills, connect them with community-based health care and provide employment services. The program's goals include helping clients avoid a return to homelessness, improving their health and reducing their need for emergency care.

Supportive services will be managed by Health Care for the Homeless, a Baltimore-based non-profit. The program will be funded in part by the State's Medicaid program, and in part by a two-year commitment of \$2 million from the participating hospitals, including \$800,000 from the Johns Hopkins Hospital and Johns Hopkins Bayview.

- Johns Hopkins is engaged in a wide range of partnerships aimed at strengthening K-12 education in Maryland and expanding educational opportunities for the State's young residents. Examples include:



A Baltimore City resident is fitted with free eyeglasses as part of the Vision for Baltimore project.

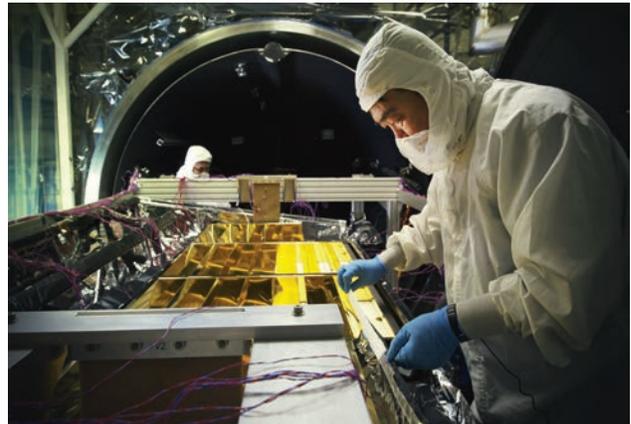


A young musician tries out a contrabassoon at a Peabody community outreach event.

- > Collaborating with Paul Laurence Dunbar High School to launch one of Maryland's first two P-TECH (Pathways in Technology Early College High School) programs. P-TECH is an innovative program that prepares students for careers in science and technology by combining rigorous high school studies with work for a corporate partner (at Dunbar, either Johns Hopkins or Kaiser Permanente) and a two-year community college degree. Dunbar's program is focused on preparing students for careers in health information. Its first cohort of 50 students was enrolled in September 2016. Total enrollment increased to 150 in 2018-2019, and is projected to reach 250 by 2021. More than 80 percent of participating students were from low-income families, and 100 percent were either African-American or Latino.
- > STEM Achievement in Baltimore Elementary Schools (SABES), a program that seeks to improve science education in grades 3 to 5 in nine of the City's elementary schools.
- > Vision for Baltimore, a program launched in 2016 by Johns Hopkins, the Baltimore City Health Department, the Baltimore City Public Schools and Vision for Learning that is providing free vision screenings to all K-8 students in the City's public schools, and free eyeglasses (donated by manufacturer and online retailer Warby Parker) to students who need them. During its first three years, the program provided over 50,000 screenings and 8,886 eye exams to students, and distributed 6,642 pairs of eyeglasses.
- > During the 2016-2017 academic year, placement of approximately 344 School of Education graduate students in teaching, counseling and other internships in 204 schools, institutions and community organizations in Maryland.

- > APL's Student Program to Inspire, Relate and Enrich (ASPIRE), which during fiscal year 2017 placed 255 high school juniors and seniors in one-on-one internships at APL in areas such as computer science, engineering, physics and applied math. During the academic year, 145 student interns worked at APL for at least five hours each week; 110 summer interns worked at the Lab at least 25 hours a week for six weeks.
- > Maryland MESA, an extracurricular science program at APL for students in grades 3 to 12 that serves approximately 2,500 students and 180 teachers each year.
- > Girl Power, APL's annual STEM expo, which drew approximately 1,100 elementary and middle school students and their families to the Lab for a day of activities designed to inform them about and interest them in STEM education and career opportunities.
- > Medical Explorers, a program offered by both Johns Hopkins All Children's Hospital and Sibley Memorial Hospital, provides high school students with opportunities to meet with and learn from health care professionals about the career opportunities the field offers.
- > Johns Hopkins All Children's Hospital is the lead agency for the Safe Routes to School program. This is a school-based injury prevention program funded statewide by the Florida Department of Transportation that reaches more than 100,000 students and educators in Florida annually to educate K-8 students on proper biking and pedestrian conduct.
- Johns Hopkins has been a partner in Baltimore's efforts to reduce violent crime and drug (especially opioid) abuse.
 - > The Johns Hopkins Hospital's Broadway Center for Addiction is one of Baltimore's leading providers of treatment for opioid abuse. The Center – which serves about 400 patients each year – provides initial screening, referrals to inpatient detox (when needed) at the Hospital, and a comprehensive program of outpatient services that includes treatment with drugs that block the craving for opioids; individual and group counseling; and health and social services. Because most of its patients are homeless, the Center also works with local organizations to provide transitional housing.
 - > In 2016 the University and the City launched the Johns Hopkins-Baltimore Collaborative for Violence Reduction – an effort to assist the Baltimore Police Department (BPD) in developing more effective approaches to reducing gun violence in Baltimore, while also taking into account community concerns about previous BPD attempts to address the problem. University researchers have worked with the BPD to evaluate and strengthen existing anti-violence programs; to develop strategies for reducing illegal gun ownership; and to improve police-community relations.

- > In April 2019, the Maryland General Assembly approved the Community Safety and Strengthening Act, a bill that among other initiatives authorizes Johns Hopkins, working closely with the Baltimore Police Department to establish its own police force. The new force will include up to 100 sworn peace officers, trained and certified to carry firearms. The bill also requires extensive training in community policing, conflict de-escalation and violence prevention, and creation of a police accountability board.
- Johns Hopkins is also an important cultural resource for Baltimore-area communities. For example:
 - > Peabody Preparatory provides music lessons, classes and other programs for area residents, both children and adults, at all levels of proficiency. In the fall of 2018, 1,914 were enrolled in Prep courses and programs, including 708 who were residents of Baltimore.
 - > In partnership with 23 local community organizations, Peabody Institute students in 2017-2018 presented 175 “community performances” in neighborhoods across the City.
- Baltimore neighborhoods and their residents also benefit from engagement of Johns Hopkins students in various forms of community service. In 2016-2017:
 - > Homewood students performed more than 124,500 hours of community service. Over 3,600 students performed nearly 100,600 hours of community service work through Center for Social Concern-based programs.
 - > Nearly 1,300 students from the East Baltimore campus performed more than 63,950 hours of community service work through programs affiliated with SOURCE (the Student Outreach Research Center), which provides a focal point for community engagement at the School of Medicine, the School of Nursing and the Bloomberg School of Public Health.



An engineer works on equipment that will be used to test the James Webb Space Telescope, the successor to the Hubble Space Telescope.

The impact of affiliated institutions

Beyond the impact of Johns Hopkins itself, Baltimore’s economy is strengthened by the presence of institutions that are affiliated with or which have chosen to locate on or near Johns Hopkins’ campuses. While they exist separately from Johns Hopkins and have their own leadership, governing structures and funding, were it not for the presence of Johns Hopkins these institutions might not have located in Baltimore. The most notable are:



Kennedy Krieger Institute on North Broadway.

- The Kennedy Krieger Institute, with 2,640 employees, an extensive program of health care, rehabilitation and education for children with disabilities, and nearly \$35.8 million in research spending in fiscal year 2017
- The Space Telescope Science Institute, with 661 employees and \$156.6 million in research spending
- The Mount Washington Pediatric Hospital, an affiliate of both the University of Maryland Medical System and Johns Hopkins, with 585 employees
- The Lieber Institute for Brain Development, with 99 employees and \$19.1 million in research spending
- The Howard Hughes Medical Institute, located at Johns Hopkins, with 46 employees and \$4.8 million in research spending
- The Johns Hopkins Federal Credit Union, with 79 employees
- The Carnegie Institution for Science, Department of Embryology, with 75 employees and nearly \$11.1 million in research spending

Together these institutions employed 4,185 people in Baltimore in the spring of 2017.

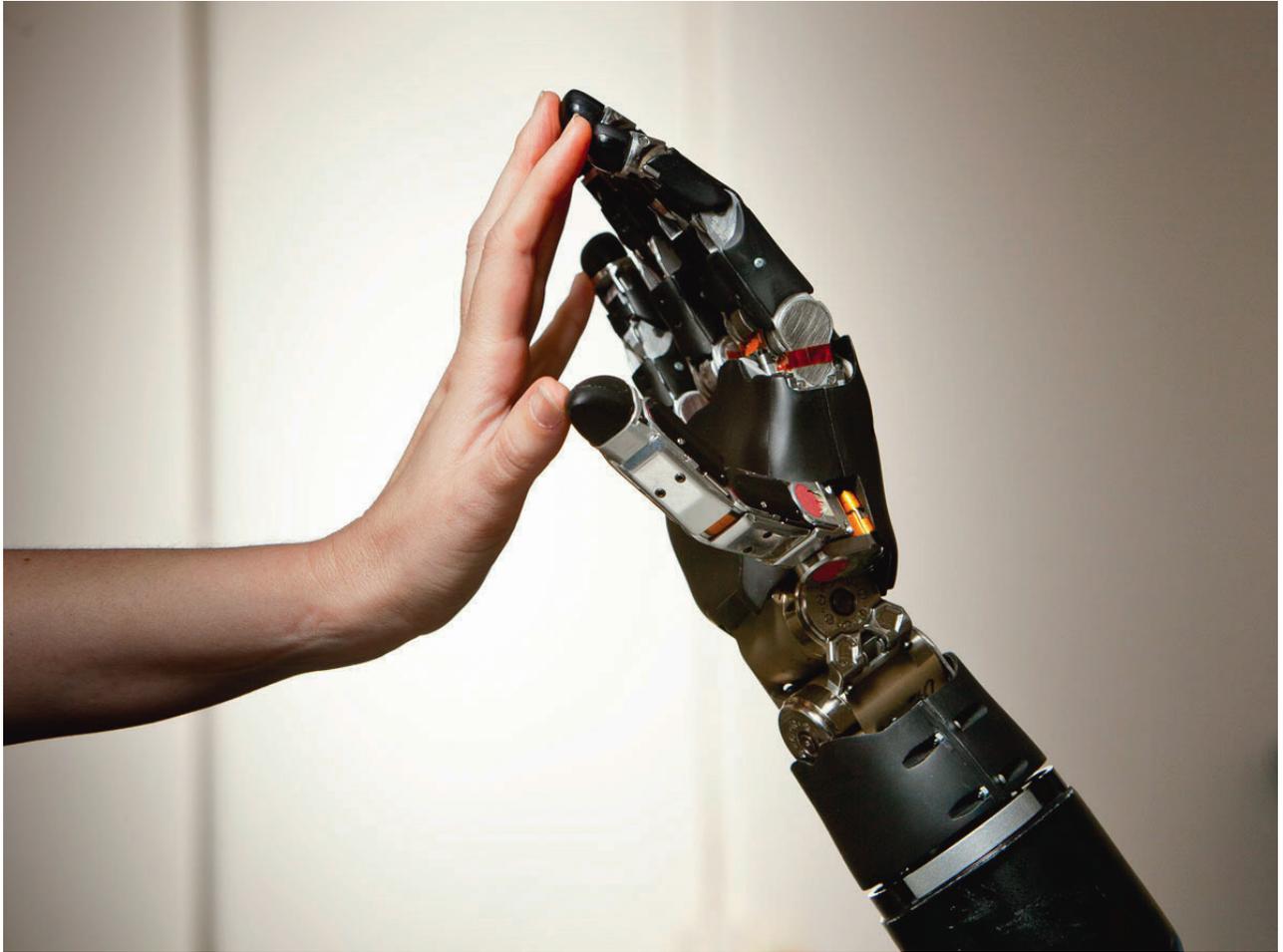


The Johns Hopkins Tutorial Project is an after-school tutoring program that provides academic support for elementary school students (grades 1-5).

Johns Hopkins' future economic and community impact

During the next five to ten years, changes in the environments in which Johns Hopkins operates are likely to provide multiple opportunities to expand the University's and the Health System's contributions to the communities where it operates – in Baltimore, in Maryland and beyond. At the same time, the University and the Health System are likely to confront a number of challenges that could constrain their ability to contribute to the creation of a better future for Baltimore, for Maryland, and for D.C. and Florida.

- Johns Hopkins is well-positioned to keep attracting and developing the talented undergraduates, graduate and professional students, post-docs, residents, researchers and clinicians on whom the continued growth of an increasingly knowledge-based economy depends. However, any new restrictions on international students, scholars, health care providers and entrepreneurs – or even the perception that the U.S. is a less welcoming place – could present a serious threat to all of the communities where Johns Hopkins operates.



A prosthetic hand and arm developed by APL can not only grab objects as a single movement but can wiggle fingers individually and independently of one another.

- Johns Hopkins is one of the world's leading research institutions, with strengths that span the humanities and social sciences, the physical sciences and engineering, medicine and public health, space and national security. The diversity of its research enterprise and its growing strength in cross-disciplinary research mean that it is especially well-positioned to increase its external research revenues. But at the same time, the University's continuing success in attracting external research support makes it particularly vulnerable to across-the-board cutbacks in federal funding. Such cutbacks – not just in direct research spending

but in the indirect cost components of federal research funding – could have a devastating effect in Maryland and D.C. (and to a lesser extent, in Florida as well). Johns Hopkins and its state and local partners have a shared interest in conveying to Congress the critical importance of maintaining federal support for university research.

- As noted previously, Johns Hopkins has in the past five years greatly broadened and deepened its support for innovation and entrepreneurship. This effort is already paying off – for the University, the Health System and the communities where they operate – and over the next five years that payoff is almost certain to increase. The challenge now is to take both (and their partners in Maryland’s innovation ecosystem) to the next level, and to solidify Maryland’s place as one of America’s leading centers of innovation.
- Despite some real progress during the past decade, the U.S. has still not succeeded in balancing the goals of expanding access to health care, improving its quality and reducing its costs. While there is no easy answer, it has become clear that innovation – in health care technology, delivery, management and financing – is probably the one essential requirement for achieving all three of these goals. Few if any U.S. health care networks are as well-positioned as Johns Hopkins to address this challenge – and to the extent that it can succeed in doing so, Maryland, D.C. and Florida will all benefit.
- Investments by Johns Hopkins such as those described previously will make the communities in which it operates more attractive places to live, work and do business, and will create new opportunities for residents of those neighborhoods. To maximize its return on those investments, however, Johns Hopkins will have to continue to broaden and deepen its local partnerships – with Baltimore City, with communities elsewhere in Maryland, with D.C. and with communities in West Central Florida, with local institutions and organizations, with the business community and with neighborhood residents.
- The \$1.8 billion gift from Michael Bloomberg cited previously will help make a Johns Hopkins education accessible to many more low- and lower-middle-income students. However, the barriers that these students face are often not just financial. The challenge for Johns Hopkins will be to use its adoption of need-blind admissions as an opportunity to address the full range of problems that lower-income students so often confront in their pursuit of a high-quality education – and thus increase the number of lower-income students who attend and succeed at the University.



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