



*An Invitation to Apply for the Position of*

**Inaugural Director**

**Data Science Initiative, Johns Hopkins University**

**Baltimore, Maryland**

*“Data and artificial intelligence are shaping new horizons of academic research and critical inquiry with profound implications for fields and disciplines across nearly every facet of Johns Hopkins. This new institute will harness the university’s innate ethos of interdisciplinary collaboration and build upon our demonstrated capacity to deliver impactful research at the forefront of this critical age of technology.”*

—Ron Daniels, President

## The Opportunity and the Search

On August 3, 2023, Johns Hopkins University (“Hopkins” or “JHU”) announced an extraordinary investment in data science and AI. The University will house the investment in the Whiting School of Engineering (the “School”) and seeks an inaugural Director of a new Institute focused on data science, AI, and their applications (the “Institute”) to match the scale of its ambitions.

For the last 14 years, throughout two strategic plans, Johns Hopkins has dramatically expanded its faculty and research capacities, adding 428 endowed faculty chairs, which included more than 50 Bloomberg Distinguished Professors. In the last fiscal year, the University expended \$3.18 billion in federally sponsored research, roughly double that of any other research university. It allies its strategic plans to formidable philanthropy, raising more than \$6 billion for “Ten by Twenty,” ten initiatives which concluded in 2020. Furthermore, JHU is gearing up for even more substantial philanthropic endeavors, with sufficient donations already committed for its current strategic plan, “Ten for One.”

The Institute is the realization of one of the ten goals identified in [Ten for One strategic plan](#): to create the leading academic hub for data science and artificial intelligence, to drive research and teaching in every corner of the university, and to magnify its impact in every corner of the world. Hopkins believes that a great university must have equally great engineering and must have a distinguished and consequentially large AI, data science, and machine learning capacity. In the last decade, with strong leadership and University investment, the Whiting School of Engineering grew its tenure-stream faculty by 54%, from 150 to 240, while nearly doubling sponsored research to \$212 million, moving its standing from 27th to 14th in the country.

With this investment in the new Institute the Whiting School will accelerate its trajectory and add 80 new faculty in three departments—Computer Science, Applied Mathematics and Statistics, and Electrical and Computer Engineering—doubling each over five years. A number of these appointments will be joint recruits with the renowned [Applied Physics Laboratory](#), the nation's largest university-affiliated research center, which has for decades conducted leading-edge research in data science, artificial intelligence, and machine learning to help the U.S. address critical challenges. In the same period, the Whiting School will add 40 more faculty members in other departments in the areas of Bioengineering, Energy and Environment. AI figures prominently in each department's plans.

In the next five years, The Whiting School will create the physical infrastructure capacity and the scale required for an initiative of this dimension.

The School plans not only to amass deep expertise in the data science and AI domains but also to hardwire these core capabilities to disciplines throughout the university. The School and the University have created the Institute to engage every part of Johns Hopkins. The University comprises nine schools and the Applied Physics Laboratory. The School of Medicine and its health system are ranked among the best nationally and globally. The School of Public Health is both the largest in the country and ranked first routinely. The APL is an essential advanced university affiliated research institute, with over 6000 engineers and \$1.9 billion in research serving as a technical resource for the Department of Defense. The Kreiger School of Arts and Sciences, the Nursing School, the Education School, the School of Advanced International Studies, the Carey Business School, and the Peabody Institute, are all distinguished and prominent in their fields, aided by substantial investments in the last ten years. The University believes that forging strong interdisciplinary links between a dramatically expanded core of data scientists and the entire university will exert a truly revolutionary impact on the quality of our research and education and contribute trusted, data-driven resources and information for the benefit of society. Accordingly, the university will recruit 30 new Bloomberg Distinguished Professors in the broad areas of Artificial Intelligence and Data Science, who will hold dual appointments across schools in the University.

The institute will be housed in a new, unusually expansive and state-of-the-art facility, constructed across two buildings, on the Homewood campus that will be custom-built to leverage a significant investment in cutting-edge computational resources, advanced technologies, and technical expertise that will speed the translation of ideas into innovations. The flagship buildings will allow institute researchers as well as others from across the university to take advantage of the creative energy generated by collaborative colocation and chance encounters with colleagues. The buildings will be home to the most sophisticated wet and dry laboratory space to allow for frictionless translation of ideas into investigation and discovery. Work is already underway to also expand the university's capabilities in computing resources to create the capacity and the scale required for an initiative of this dimension.

Hopkins intends the Institute to join AI and Data Science, propel discovery and innovation and create the capacity for rich domain knowledge at an unrivalled scale, combining world-leading, large units that are heavily data dependent with a massive increase in computing sophistication and power.

To harness these extraordinary investments, the creation of a data science and translation institute will be supported through institutional funds and philanthropic contributions that are fully secured already.

The Director will work to realize the Institute, working across the engineering school and university broadly and lifting the university to new heights on research excellence and translational impact. The ideal candidate will be an exceptional leader who brings a strong record of research excellence, successful experience managing people, projects, and processes across fields and disciplines, an ability to create and implement programs to grow cutting-edge research, and the requisite interpersonal and communication skills to represent the Institute externally and to secure additional resources.

## Data Science, AI, and Translation Institute

The Institute was conceived to significantly strengthen the university's capabilities to harness emerging applications, opportunities, and challenges presented by the explosion of available data and the rapid rise of accessible AI. The Institute will bring together world-class experts renowned in their fields to support the Institute's pursuits, with substantial cross-disciplinary expertise to ensure the impact of the new institute is felt across JHU.

The Institute will serve as a central hub dedicated to the application, understanding, collection, and risks of data and the development of machine learning and artificial intelligence systems across a range of critical and emerging fields, from neuroscience and precision medicine to climate resilience and public health, and from policy innovation and governance frameworks to the social sciences and humanities. Johns Hopkins will develop this new Institute with a commitment to data transparency and accessibility, highlighting the need for trust and reproducibility across the research enterprise and making data available to inform policymakers and the public. Additionally, Institute scholars will partner with faculty from across Hopkins in fields including bioethics, sociology, philosophy, and education to support multidisciplinary research that helps academia and industry alike understand the societal and ethical concerns posed by artificial intelligence, the power and limitations of these tools, and the role for, and character of, appropriate government policy and regulation.

The Director will report to the Dean of the Whiting School of Engineering, with a dotted line to the Provost of the University. The Director and the Dean will have ultimate authority for the 80 faculty recruitments associated with this initiative, working collaboratively together with the departments.

Additional JHU programs that will contribute to the new Institute include:

- The Institute for Data Intensive Engineering and Science and its substantial and growing computing infrastructure facility on the Bayview campus in East Baltimore.
- The [Bloomberg Center for Government Excellence](#), which has worked with hundreds of cities around the world to develop data-driven public sector solutions, using data, research, and analysis.
- The [Malone Center for Engineering in Healthcare](#), which brings together engineers, clinicians, and care providers to improve the efficiency and effectiveness of diagnosis and treatment, reduce harm and adverse events, and promote patient and provider satisfaction.
- The [Center for Language and Speech Processing](#), which is one of the world's leading academic research centers focused on the science and technology of language and speech.

- The Mathematical Institute for Data Science (MINDS), in which members develop mathematical theories that hasten the analysis of the massive amounts of data being used to study everything from the inner workings of the human cell to the structure of the universe.

Johns Hopkins is also home to the renowned [Applied Physics Laboratory](#), the nation's largest university-affiliated research center, which has for decades conducted leading-edge research in data science, artificial intelligence, and machine learning to help the U.S. address critical challenges.

## About the Johns Hopkins Whiting School of Engineering

Founded in 1913 and renamed after a transformative gift by alumnus George William Carlyle Whiting in 1979, the Whiting School of Engineering houses a current enrollment of 4,558 students, comprised of 1,947 undergraduate and 2,611 graduate students.

The Whiting School of Engineering has launched more than 20 [research centers and institutes](#), focused on Robotics and Autonomous Systems, Machine Learning and Data Science, Cybersecurity, Energy, Material Science, as well as several engineering subspecialties. More than half of the Whiting School's annual research expenditures come through their centers and institutes.

The University has invested steadily and strategically in the Whiting School. JHU believes that a great university must have a great engineering school, engaged with the whole University and with the scale to make discoveries of global consequence. Since the "Ten by Twenty" strategic plan, ranging from 2010 to 2020, the School, headed by three-term dean Ed Schlesinger, has doubled annual revenue to \$408 million, and grown its endowment from \$124 million in 2014 to \$223 million in 2023. As part of its planning for the future, the School and the University invested substantial funds in the AIX Foundry, which laid the grounds for this much larger initiative. It will fold entirely into the DTSI as the School establishes the Institute.

Today, the Whiting School of Engineering ranks 14th among national universities according to [rankings by U.S. News and World Report](#), consistently ranked first in Biomedical Engineering/Bioengineering specialties.

By every measure, the Whiting School has launched a transformation. Over the past ten years, undergraduate applications have increased by 55%, enrollment in full-time master's programs has grown by 196%, and doctoral applications have increased by 94%. The overall volume of sponsored research funding initiated by Whiting School faculty also continues to show sustained growth. Since 2013, overall research funding has increased by 90%, with NIH funding growing by 94% and other federal funding (not including the NSF and DOD) growing by 222%.

Johns Hopkins has an unrivaled set of Schools and Laboratories with deep and globally consequential domain knowledge. Johns Hopkins Medicine is a \$10 billion integrated global health enterprise with more than 40,000 full-time faculty and staff members operating six academic and community hospitals. The School of Public Health holds a prominent position as the leading institution in the country, boasting 80 research centers and institutes engaged in projects across over 120 countries. The Applied Physics Laboratory (APL) is the largest not-for-profit university affiliated research center in the nation. The Whiting School is in close collab-

oration with all these entities, playing an integral role in this success story. Collaboration across the University offers some of the strongest possible avenues for achieving excellence at Hopkins, and they factor deeply in the University's strategic thinking.

In the University's 2023 strategic plan, *Ten for One*, Johns Hopkins has committed to integrating data science, machine learning, and AI into all they do at the University. Through the Whiting School, the University will add faculty and computing infrastructure to position Hopkins as the best academic computing infrastructure in the country. That work will be centered in the Institute but will serve the entire University.

These investments will add to investments already scheduled in the School's prior strategic and philanthropic plans that are pledged to reinforce departments across the School. In the last decade, the Whiting School has made substantial investments in bioengineering, energy, and the environment, and those investments will continue. The School will accelerate its current trajectory, powered by a strong history of revenue growth, sponsored research success, fundraising, and formidable University support. The Whiting School has the finances, immediately available, to execute on its five-year strategic plan.

## The Director

The inaugural Director of the new data science, AI, and translation Institute is the scientific leader and operational head of the Institute. In this capacity, they will provide the intellectual vision, strategic leadership, and oversee the operational and financial management for the Institute, its members, and its diverse research and entrepreneurial efforts.

In collaboration with JHU faculty, the Director will develop, articulate, and advance the scientific vision required to attract talent, funding, and partners to the Institute. The Director will lay the groundwork for the development of the Institute into a key strategic asset for JHU. They will promote collaboration and cooperation across the University and affiliated institutions, leveraging internal and external resources and opportunities to create a distinctive profile and impact within the global scientific community.

The Director will work with the dean and faculty to initiate novel research directions, identify cross-cutting themes, and facilitate connections between the Institute and pre-existing research and academic programs across the University. In partnership with department chairs, the Director will recruit, develop, oversee, and inspire a talented cadre of world-class scientists in data science and AI and interdisciplinary Bloomberg Distinguished Professors. The Dean and the Director will have final decision-making authority regarding the 80 faculty lines.

Building external relationships with industry and government, forging connections to strategic partners and affiliates, and securing philanthropic and research funding to propel the Institute forward will be central to the work of the Director.

## The Opportunities and Challenges for a Founding Director of the Institute

Johns Hopkins University has large data sets, leading domain expertise, with especially heavy concentrations in national security, the full range of health-related professions, and complementary strengths in the basic sciences, humanities and social sciences. It has a strong, constantly improving engineering school with highly ranked computer science, applied math, and electrical and computer engineering departments. The departments are strong but small compared to their peers. To succeed in the contemporary AI world, Hopkins will need both scale and vision.

JHU seeks an experienced, academic entrepreneur in AI, who has led programs at scale, and who will lead Hopkins as it creates the leading academic hub for data science and artificial intelligence. The Institute should help to drive research and teaching in every corner of the University and should magnify JHU's impact in every corner of the world.

The Director will orchestrate a five-year plan of fundamental transformation.

In the frame of this overarching charge, the primary opportunities and challenges for the Director will include the following:

### ***Formulate and implement a scientific vision for the Institute.***

The University and the Whiting School of Engineering have shaped an ambition, secured the resources, and are hiring a Director to engage the University administration and the faculty, and to formulate and realize a scientific vision, unique to Hopkins, organic in its origins and able to make a powerful, global contribution. The Director will help to shape an AI vision for the Institute and for the entire University.

The Director will join and build on existing discussions and the emerging, broad outlines of a consensus. Hopkins deeply values both foundational research and practical and commercial application. The University's huge domains create, implement, and deploy at scale, from caring for rare diseases to piloting unmanned aircraft. Hopkins will unite the triad of data, domain, and AI. It will require a much larger, much improved, and leading capacity for foundational discovery in AI, and the intellectual and physical architecture for application across an entire University, eager to apply the latest computational innovation.

During a time of tremendous momentum, there are endless opportunities for success and for distraction. Strategy will require focus, regular reflection, and careful analysis of the best path forward. The development of data science and artificial intelligence under this Director will shape the future of JHU for decades.

The Director must cultivate an intellectual atmosphere that elicits the elements of a vision; promotes interdisciplinary collaboration and translational research; creates an understanding of the academic and scientific cultures and strengths of the University; and develops a clear sense of the emerging and promising future research directions and societal needs in data science and AI. The Director will need to demonstrate a substantial breadth of scientific experience, outstanding scientific judgment, and wide-ranging external engagement. The Director's ability to craft a shared vision for the future that is equally daring and creative as it is relevant and feasible will be vital to the future of the Institute, the School, and the University.

***Balance AI foundations and application while exploring the theoretical frontiers.***

In Hopkins' emerging vision, AI will include both foundational and application expertise. On the foundational side, the Director ensures that Hopkins will explore the theoretical limits of AI's capabilities, aiming for AI to be reliable, equitable, secure, and trustworthy. These are foundational inquiries into the nature of error that will govern AI's potential. This technology has moved quickly, often driven by industry. To maximize impact, Hopkins will need to both lead and follow in a swiftly moving world of AI foundational knowledge.

Hopkins has eager consumers, hoping that AI and data science innovations will enable precision medicine; leverage patient data, medical expertise, and domain-specific insights from clinicians; reveal patterns in public health; enable social science; open new pathways in the humanities; and strengthen the national defense.

Hopkins will need a critical mass of engineers and scientists within the Institute, both in specialized disciplinary work and across disciplinary and domain boundaries, who are built to translate, back and forth, between application domains and emerging knowledge. The Director will guide the creation of the intellectual architecture in both foundational and translational work.

In close collaboration with department heads, hire and retain excellent faculty committed to the bold and ambitious mission of the Institute.

The new Institute joins a heated market. Industry has made impressive progress in AI and pays highly competitive salaries, and most of the research-intensive universities in the country are investing in AI and recruiting. Sustained academic program growth will require hiring and retaining superb faculty committed to both the academic standards of the University as well as the engagement mission of JHU.

The university has given authorization to hire the faculty to the Director and the Heads of the three departments. Each department is expected to hire five to six individuals a year, which could easily mean 80 to 100 interviews over the course of a year. The Director will work closely together with the Department Heads, share strategies, and engage the faculties, who must do the hard work of luring candidates, conducting interviews, and closing the right hires.

***In a demanding market, the Director has three roles:***

The Director must work with the Heads and faculty hiring committees to weave together a departmental, cross-departmental and Institute-wide hiring strategy. It must accommodate the strengths and limitations of each department and simultaneously provide the concrete expression of a shared vision and an Institute strategy.

Hopkins will seek outstanding candidates, both senior and junior. The Director helps the School, the Institute, and the departments by leveraging resources: space, start-up packages, salaries, named professorships, when possible, computational resources, and above all, promises. The Director works closely with Heads, faculty, and leadership both at the Whiting School and across the University to develop a creative and nimble hiring process that results in the successful recruitment of faculty who will thrive in the culture of JHU.

As the departments make appointments, the Director must ensure that faculty are supported and well-resourced to fulfill the interdisciplinary mission and commitments of the Institute. The Director will promote and



uphold a culture of belonging throughout the Institute and the broader campus community, ensuring that the research and educational experiences are broadly inclusive and welcoming, especially to underrepresented groups.

***Actively engage with industry leaders and serve as a leader in the data science and AI community.***

Industry investments will make a large contribution to the field of AI. The Director will engage and partner with industry leaders, extending invitations for them to join cutting-edge University research and contribute to innovative and interdisciplinary initiatives. The Director must be a visible leader in the technology sector who can ensure that JHU is responsive to the needs of government and business leaders. Hopkins should join the economy of AI, as a partner and as an inventor, helping to build the computing economy both nationally and locally in the Baltimore area.

Develop and strengthen relationships with key partners across the JHU community, both administrative and academic.

While the Whiting School serves as the institutional home for the Institute, the Institute both serves and is served by the entire University. Johns Hopkins University will build the facilities and employ the professional staff that will create computing capacity. The Director will work closely with the Whiting dean, the provost, the CIO, other University administrators and deans, center and institute directors, to optimize how the Institute operations intersect with and support those of the University and how University efforts will enable the Institute. The University-wide planning is underway.

In the Institute's academic mission, the Director will work to quickly develop and augment networks across campus to attract interest and engagement with key faculty, ultimately strengthening interdisciplinary research efforts. The Director will work across the University to formulate a strategy to best utilize and leverage both data and domain expertise.

***Facilities and Computational Infrastructure***

The work of hiring faculty will begin immediately. They will need resources: space, computation, and scientific support. The Institute has the financing and the plans for all of the essential parts, but in the first few years, the Institute will need to quickly add computing capacity and swing space. The Director will work with the dean and University officials to create the interim and the final plans and to deliver the essential pieces on time for a rapid expansion of the faculty. Large parts of the School and the University must cooperate to build the Institute. The Director finds the partners, creates the plan, and stitches the parts that enable success.

***Research Funding and Donor Relations***

The Institute has its core funding, and its work will galvanize sponsored research efforts in the School and the University. Faculty will drive that work, aided by the Hopkins research administration. Unlike most such enterprises, funding is not the Director's first concern, but finances always play a role. There will be opportunities to help shape research proposals. New and existing donors will create opportunities and need proposals and reports. Government agencies will have a strong interest in the success of Hopkins' endeavors.



The Director should expect to attend with care to the work of both research funding and philanthropy. The Director will effectively communicate the Institute's capabilities and successes institutionally, locally, and globally, building the Institute's reputation and creating opportunity.

### ***AI education at Hopkins***

There is enormous student demand for AI learning, spread broadly across the University, and including every level of study, from undergraduates to graduate students, professional school students, and postdocs. The Institute will add 110 faculty, each of whom will have graduate students and postdocs, and many, if not most, will teach undergraduates. Every field and school needs AI trained people, and Hopkins has an opportunity, with the Institute, to make a significant contribution.

The Institute is meant to enable the University. It is housed in engineering, but its educational mission should reach broadly, to aid in the development of new degree programs and to strengthen both pedagogy and curriculum in Hopkins' current offerings.

As the Director and the leadership team build out the Institute, education will figure as one of its core missions and should occupy a central place in their plans.

### ***Encouraging translation and building an entrepreneurial ecosystem***

Johns Hopkins intends to create one of the world's leading centers of impactful, commercial, activity that employs the latest developments in data science, AI, and machine learning. The University and the Institute should fuel an ecosystem of invention and entrepreneurship, that rivals the great technology centers built up out of university work.

The Director will encourage translational efforts of the Institute faculty, helping them to translate their academic work for impact in widely varied fields through new enterprises, partnerships with corporations, deployment in medical settings, and alliances with venture funds. In this creative work, the Director will partner with Johns Hopkins Technology Ventures to enhance and expand the ecosystem around the University and the City of Baltimore.

## Qualifications and Characteristics

Johns Hopkins University seeks an exceptional leader from academia, industry, or government with a national presence in research circles, experience building or operating a high-caliber operation in this arena, and the communication skills and leadership presence to represent the initiative/JHU externally. A doctorate in a discipline represented in the initiative is assumed, and candidates holding Professor or equivalent rank are strongly preferred. JHU will look to the Director to lead all aspects of the Institute's mission of research excellence, innovation and impact.

The successful candidate will ideally have:

- An internationally recognized track record of scientific achievement as evidenced by an outstanding publication record.
- A track record of visionary leadership, strategic thinking, and effective planning coupled with the demonstrated capacity to build consensus and provide the decisive leadership required to implement a strategic vision and build the operating platform to support it.
- Evidence of building, facilitating, and supporting highly integrative research programs that span across multiple disciplines.
- Experience working in complex, multi-stakeholder environments and strong communications skills; the ability to build successfully at multiple interfaces (e.g. JHU schools, departments and labs, and industry) and to integrate activities so that the initiative and its partners are mutually strengthened through collaborations.
- Significant and successful management experience in large research and development enterprises including a demonstrated record in building and leading academic units, departments, or institutes/centers of comparable scale.
- A demonstrated ability to recruit, retain, and direct first-rate scientists.
- Experience with large government agencies, foundations, industry, and philanthropy to have developed a thorough understanding of funding opportunities and pathways and strategies to successfully attract support to ensure the financial success of the initiative.
- Success in translating efforts from academia to applications beyond the academy.

## TO APPLY

*Inquiries, nominations, and applications should be sent in strict confidence to:*

John Isaacson, Partner

Karen McPhedran, Managing Associate

Ibaad Nazeer, Associate

Mindy Cimini, Senior Search Coordinator

Isaacson, Miller

Boston, MA

## **Apply Here**

*Johns Hopkins University is committed to recruiting, supporting, and fostering a diverse community of outstanding faculty, staff, and students. As such, Johns Hopkins does not discriminate on the basis of sex, gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status, or other legally protected characteristic in any student program or activity administered by the university or with regard to admission or employment.*