



BROWN

Brown University

# OPERATIONAL PLAN FOR INVESTING IN RESEARCH

Realizing the Goals of *Building on Distinction: A New Plan for Brown*

October 2022



October 24, 2022

Dear Members of the Brown community:

As a leading research university, Brown has a tremendous opportunity to make a transformative impact in the lives of individuals, families and communities locally, nationally and globally. From treating Alzheimer's disease and unlocking the mysteries of RNA, to developing sustainable energy solutions, addressing the roots of economic inequality, and deepening understanding of the historical and cultural legacies that shape current issues, there is no question that the high-quality research that Brown produces has a critical role in benefitting society.

In alignment with Brown's strategic plan, *Building on Distinction*, this *Operational Plan for Investing in Research* serves as a detailed roadmap for propelling Brown's research and scholarship to a new level of excellence. It calls for targeted investments in space, faculty, staff and students, as well as streamlining support structures. Through this comprehensive strategy for increasing investment in research, we will position the University to deepen and broaden its impact, visibility and reputation for distinction.

This ambitious but achievable plan builds on the existing strengths of our research enterprise to positively impact communities around the world, including the Providence and Rhode Island communities that Brown calls home. It builds on the dynamic growth and substantial progress in research activity over the past several years.

A core strength of this plan is that it was finalized through a process that engaged faculty and staff across the Brown community, and it includes participatory and transparent guidelines for growth in research across all disciplines. The framework for growth will involve investing in faculty, staff and students who conduct and support research; investing in research infrastructure; strengthening key partnerships and collaborations; and reducing existing barriers to research by improving policies and procedures.

Research touches every area of the University, and growing our scholarly activities will benefit the entire Brown community. The plan illustrates how growing research supports our efforts to promote diversity and inclusion at the University, strengthens our educational programs, and enhances Brown's impact globally. The plan also reflects the values at the foundation of our mission to prepare students to lead purposeful lives and contribute solutions as we work toward a more equitable and just society.

Our greatest asset in achieving Brown's research goals is the outstanding commitment of the members of the Brown community. Working together, we will strengthen the positive impact on the communities we serve through our commitment to advancing solutions to the most pressing challenges facing the world.

Sincerely,

Christina H. Paxson  
President

Richard M. Locke  
Provost

Contents

**INTRODUCTION 3**

---

A Strong Foundation for Growth..... 4

The Goal..... 9

The Strategy..... 11

**INVESTING IN OUR PEOPLE 12**

---

Regular Faculty..... 12

Research Faculty..... 13

Staff..... 14

Ph.D. Students..... 16

Postdoctoral Researchers..... 19

Undergraduate Research..... 22

**INVESTING IN OUR SPACE 23**

---

Humanities..... 24

Life and Medical Sciences..... 25

Physical Sciences..... 26

Social Sciences..... 27

**INVESTING IN ADMINISTRATIVE AND SUPPORT SERVICES 28**

---

Library Resources..... 28

Special Collections..... 29

Internal Funding..... 29

Research Administration..... 29

Administrative Systems And Processes..... 30

Computing Infrastructure..... 31

Service Centers And Cores..... 31

**INVESTING IN SIGNATURE RESEARCH INITIATIVES 33**

---

**CONCLUSION 35**

---

**APPENDIX: HOW THIS PLAN WAS DEVELOPED 36**

---

Background..... 36

Engagement and Feedback..... 36

## INTRODUCTION

---

Brown University is a major research university with a long and well-established reputation as a leader in innovative undergraduate education. We aspire to be among the very best at what we do, and Brown's reputation is inextricably linked to the strength of our research enterprise.

Investing in and growing the University's research enterprise will help us further our mission and reputation because research reinforces innovation in our classrooms, attracts world-class faculty and top students to our campus, stimulates innovation and economic development in our state, and benefits society through the creation and dissemination of knowledge. Our faculty are pathbreaking scholars whose work expands knowledge at the leading edge of their disciplines. Our graduate programs train the next generation of scholars who will push these frontiers even further. Our undergraduates participate as active partners in research as part of their intellectual formation. Our staff support the entire research enterprise through subject matter expertise and specialized skill sets. Research is a distinguishing feature of Brown University.

Research conducted at Brown improves the health, wellbeing, capabilities and human possibilities of people across the globe and in our local community. Faculty experts advise government institutions, elected officials, business leaders and non-governmental organizations while also catalyzing innovation in the commercial and nonprofit sectors. Brown's distinctive institutional character stimulates our researchers to think differently about the most significant issues facing our society and to develop novel approaches that might not emerge elsewhere.

This Operational Plan is the culmination of discussion and feedback from Brown faculty and staff over the course of several months, led by President Christina H. Paxson and Provost Richard Locke, with support from the Senior Deans and other leaders across the institution. The plan, which will be implemented over the next five to seven years, calls for a significant investment in research at Brown to further our position as a leading research university by building even more intensively on Brown's distinctive culture and strengths. The plan outlines steps that will guide this effort, opening a new phase in the University's strategic plan, *Building on Distinction*.

## BUILDING ON DISTINCTION

*Brown is both a major research university and an educational institution based upon collegiate values. We believe that education and research reinforce each other and that the best academic programs bring innovative teaching and rigorous research together.*

— “The Brown Difference,” *Building on Distinction*

*Building on Distinction*, which has guided the University's growth and development for nearly a decade, is divided into four areas:

- **Integrative Scholarship.** Building on Brown's distinctive strength in research and education that integrates knowledge from diverse disciplines through investments in nine thematic areas.
- **Educational Leadership.** Sustaining Brown's position as a leader in undergraduate, graduate and medical education through innovative approaches to teaching and learning.
- **Academic Excellence.** Strengthening Brown's community of faculty, staff and students by supporting scholarship and partnerships, cultivating diversity and enhancing access.
- **Campus Development.** Reinvigorating Brown's physical campus both on and off College Hill, strengthening ties to our city and state, and creating a robust virtual campus.

Since the launch of *Building on Distinction*, Brown has increased the breadth and quality of scholarship and research in ways that have involved a larger number of students in the discovery and creation of knowledge. This expansion of Brown as a research university was made possible by the ongoing success of the \$3 billion *BrownTogether* campaign, which has supported the essential building blocks of research, including:

- endowed professorships;
- seed funding for research innovation;
- improvements in research infrastructure, including laboratories and libraries;
- funding for staff researchers and administrators supporting research; and
- student support through fellowships and internships.

Brown is now well positioned to take its research mission and its corresponding impact on our students and the wider world to the next level. This document lays out how Brown proposes to expand further the core research goals set forth in *Building on Distinction* by:

- supporting existing research across campus and increasing the number and kinds of researchers at all levels;
- investing in core research infrastructure that benefits scholarly activities across the University;
- identifying an initial list of capital needs and known projects under consideration in support of research growth across disciplines; and
- soliciting proposals for future research initiatives that build upon existing strengths and fall under the nine integrative themes from *Building on Distinction*.

**Many of the goals outlined in this Operational Plan are already underway and are included as priorities in the \$1 billion extension of the *BrownTogether* campaign.** As Brown has demonstrated consistently in recent years, a clear understanding of our distinctive strengths combined with sustained adherence to the core principles derived from our institutional values enable us to reach the very highest levels of excellence.

## A Strong Foundation for Growth

The investments Brown has made in recent years have created a period of unprecedented dynamism in research activity. Indeed, Brown's research enterprise has grown significantly faster than those of our peers since the launch of *Building on Distinction* in 2014, as evidenced by several key metrics:

- growth in our faculty and Ph.D. student body;
- increased publications, such as books and articles;
- a higher number of honorific awards earned by Brown faculty; and
- growth in external funding for our research programs.

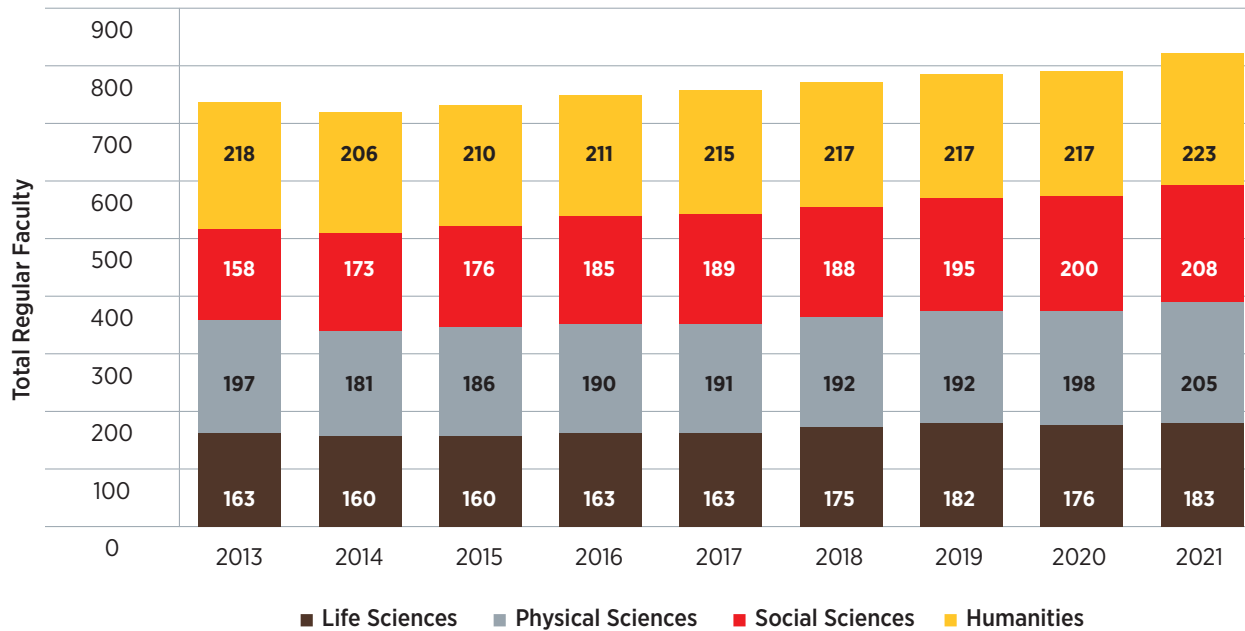
### INVESTMENT IN FACULTY AND GRADUATE STUDENTS

The University has significantly diversified and increased the number of faculty and graduate students since 2013 (the year before the strategic plan was launched). As shown in Figure 1, Brown has added more faculty across the disciplines — with 11% growth through Spring 2021. The humanities continue to have the largest share of faculty across the University, and the social sciences saw the largest growth in faculty both in absolute and relative terms.<sup>1</sup> It is notable that over the past few years, the University diversified the faculty as well, increasing the percentage of regular faculty from historically underrepresented groups from 8% to over 16% since the 2014-15 academic year.

---

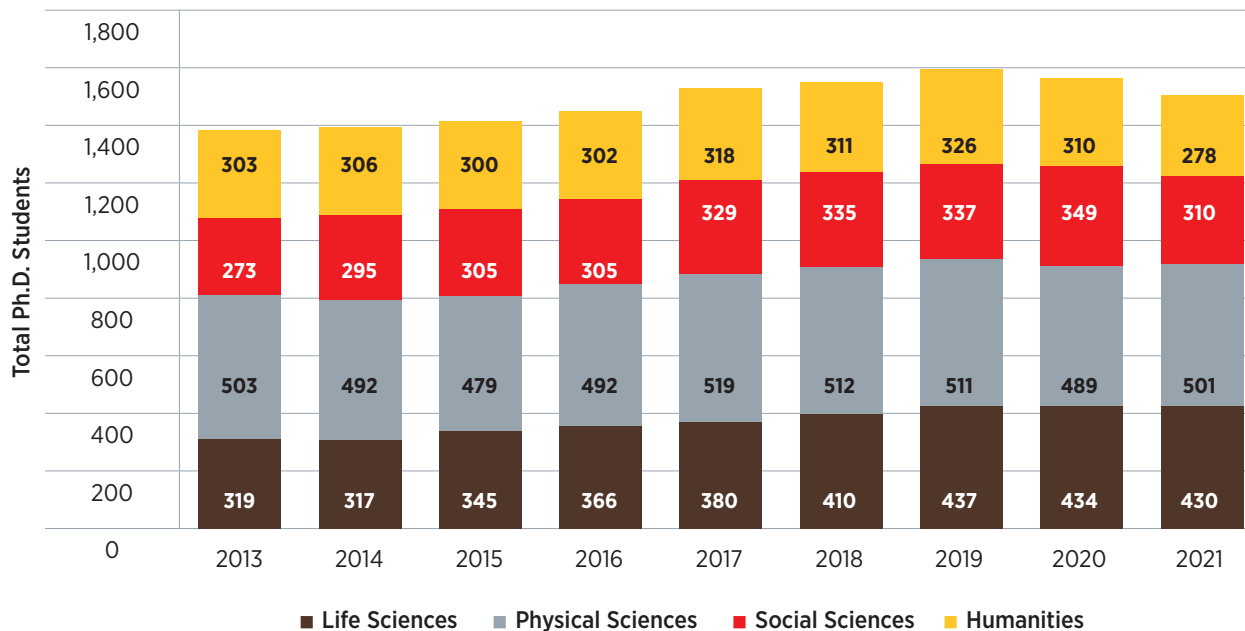
1 Data from the [Office of Institutional Research Employees Factbook](#)

Figure 1: Regular Faculty Growth by Academic Division<sup>2</sup>



The University saw similarly impressive growth in graduate student enrollment since 2013. As shown in Figure 2, Brown added over 210 Ph.D. students — a growth of 15% — through Spring 2020. Due to the COVID-19 pandemic, the University — and most peer institutions — saw a slight dip in Ph.D. enrollment over the past two years, but there are still 120 more Ph.D. students than there were before *Building on Distinction* launched.<sup>3</sup> More impressive, though, is the fact that the University significantly grew the proportion of Ph.D. students from historically underrepresented groups — increasing from 9% in 2013 to 16% in 2021.

Figure 2: Ph.D. Enrollment Growth by Academic Division<sup>4</sup>



<sup>2</sup> The four Academic Divisions are named and defined on page 161 of the [Faculty Rules and Regulations](#).

<sup>3</sup> Data from the [Office of Institutional Research Enrollment Factbook](#)

<sup>4</sup> The four Academic Divisions are classified as such in the [Faculty Rules and Regulations](#), page 161.

## GROWTH IN RESEARCH ACTIVITIES

Scholarly impact and research productivity are measured differently across the variety of disciplines at Brown. Some disciplines measure productivity and impact through the publication of books and articles, others focus on citations or grant funding from government agencies, and still others emphasize well-received public exhibitions and performances.

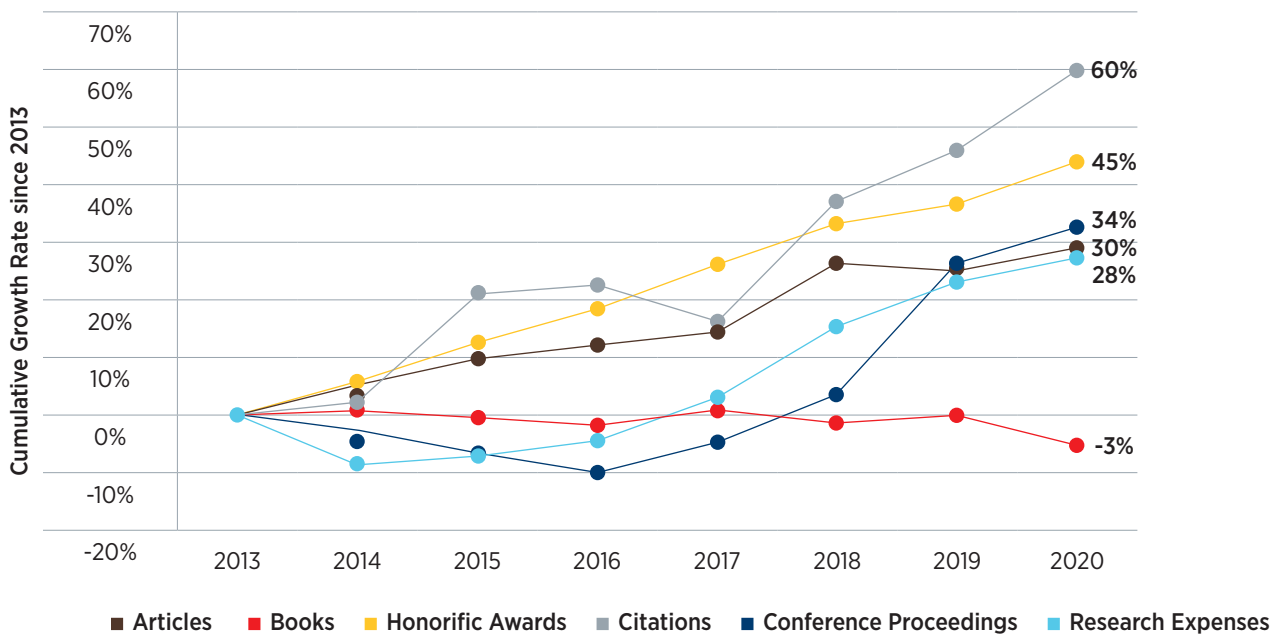
Across all relevant metrics, Brown faculty have dramatically increased their scholarly impact and productivity since the launch of *Building on Distinction*. These increases are evident both on a per-faculty basis and in the aggregate across all faculty. Below are a few examples of this growth, which occurred between 2013 and 2020:<sup>5</sup>

- **Articles.** The total number of articles by Brown faculty increased by 30% and the number of articles per faculty member increased by over 15%.
- **Books.** Brown has risen to be one of the top five Ivy plus universities in terms of books published per faculty member.
- **Citations.** The total number of citations of work by Brown faculty increased by 60% and the number of citations per individual faculty member increased by more than 40%.
- **Conference Proceedings.** The total number of conference proceedings for which Brown faculty contributed scholarship increased by nearly 35% and the number of proceedings per faculty member increased by nearly 20%.
- **Honorific Awards.** The total number of honorific awards received by Brown faculty in recognition of their research and scholarship increased by 45% and the number of awards per faculty member increased by nearly 30%.

Additionally, Brown's federally sponsored research expenditures increased by 41% over the last five years — the highest growth among our peer institutions by a wide margin.<sup>6</sup> And Brown outperforms some of our peers in terms of research activity or grant funding per faculty member, particularly in the humanities and social sciences.

Figure 3 illustrates the historic growth rates of these metrics since the launch of *Building on Distinction*. This growth in research activity has been made possible by the hard work of our faculty and their research teams, as facilitated by the University's investments across campus.

Figure 3: Cumulative Growth Rates for Research Metrics since 2013<sup>7</sup>



<sup>5</sup> Data from Academic Analytics, based on data from active Brown faculty in 2013 and 2020

<sup>6</sup> Data from the National Science Foundation, Higher Education Research and Development Survey

<sup>7</sup> Expenses data from the National Science Foundation, Higher Education Research and Development Survey; all other data from Academic Analytics, based on active Brown faculty between 2013 and 2020

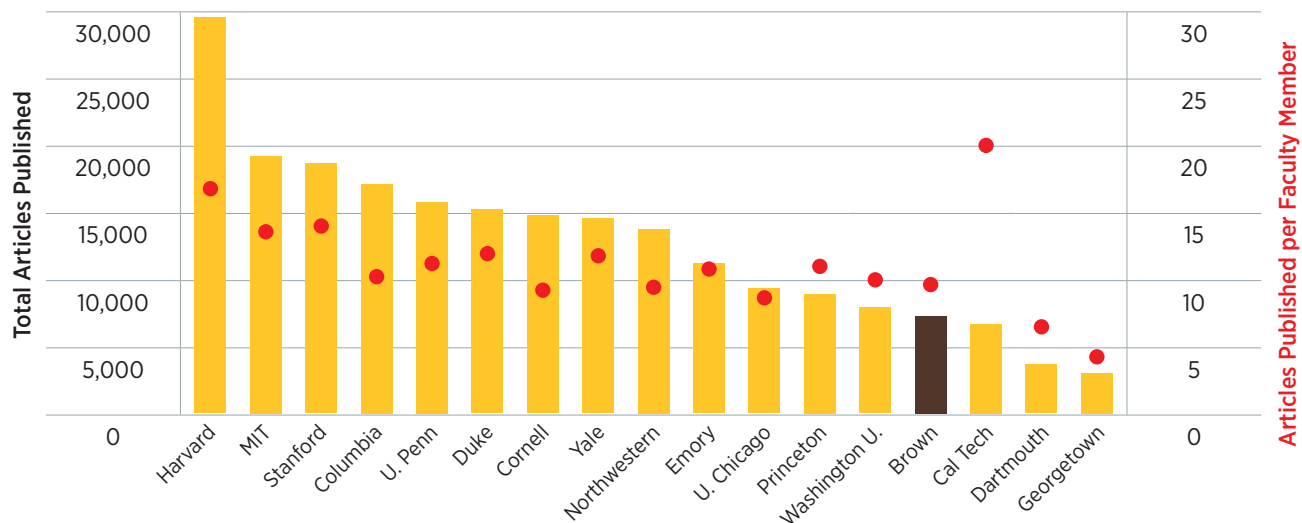
**COMPARISON AGAINST PEER INSTITUTIONS**

Despite this remarkable growth, it is true that Brown remains significantly smaller than its peers in terms of research activity. In 2019-20, Brown ranked:

- 79th in the country in terms of articles published in the last four years;
- 69th in the country in terms of citations from the last five years;
- 44th in the country in terms of books published over the last 10 years;<sup>8</sup> and
- 74th in the country in federal research expenditures, which is considerably behind other private institutions that made up roughly half of the top 50.<sup>9</sup>

The following figures illustrate the articles (Figure 4) and books (Figure 5) published, along with total research expenditures at Brown and 16 peer institutions (Figure 6).

**Figure 4: Articles Published in the Last Four Years by Institution (AY2020-21)<sup>10</sup>**



<sup>8</sup> Data from Academic Analytics, based on data from active Brown faculty in 2020

<sup>9</sup> Data from the National Science Foundation, Higher Education Research and Development Survey

<sup>10</sup> Data from Academic Analytics, based on data from active Brown faculty in 2020 looking at the last four years of article publications in major academic journals



Figure 5: Books Published in the Last 10 Years by Institution (AY2020-21)<sup>11</sup>

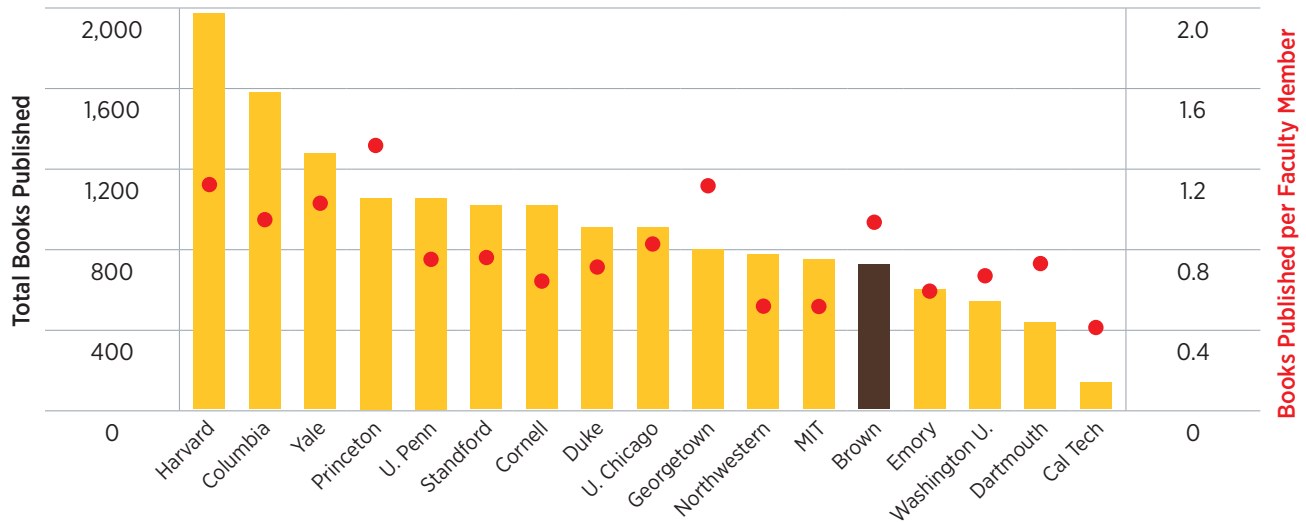
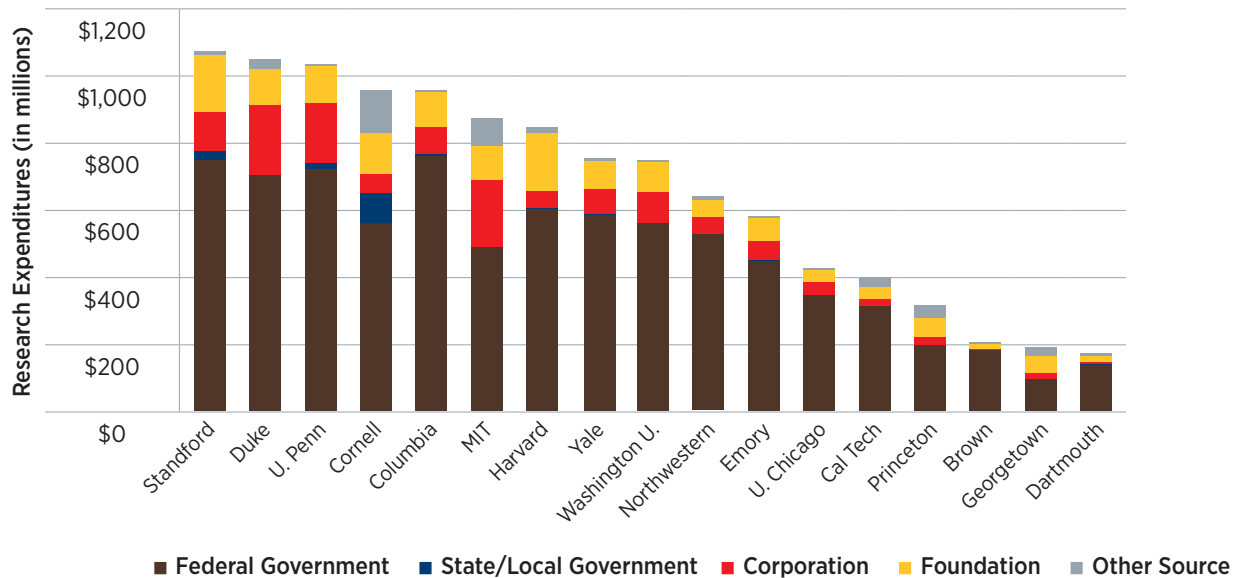


Figure 6: Total Research Expenditures by Institution (FY20)<sup>12</sup>



Some differences in research activity reflect particular institutional configurations. Many of our peers have directly affiliated health systems that funnel research funding through their respective universities, whereas research conducted by Brown clinical faculty at our affiliated health systems is not presently included in our research enterprise. Other institutions are affiliated with national laboratories with millions of dollars in guaranteed annual funding. And many of our peer institutions have a wide array of graduate and professional schools that fund expanded research portfolios.

11 Data from Academic Analytics, based on data from active Brown faculty in 2020 looking at the last 10 years of book publications

12 Data from the National Science Foundation, Higher Education Research and Development Survey

Given that Brown competes against these other universities for the very best faculty, staff and students, investing in and growing Brown's research enterprise is critical for elevating the University's reputation and visibility, and strengthening our distinctive approach to undergraduate education. Although our faculty, research staff and students already perform cutting-edge research that makes a difference in addressing issues of importance to society now and in the future, Brown is currently too small in some fields and in our research support structures to achieve our full potential. Ensuring that Brown's research enterprise does not remain below scale and can continue to attract the very best faculty, staff and students requires strategic focus and clearly articulated goals.

## The Goal

*Brown will make significant investments to grow research across all disciplines over the next five to seven years.*

Brown has a unique opportunity to achieve this ambitious goal with focused planning, prioritization and processes that engage stakeholders throughout the community.

This does not mean that we expect every faculty member, staff member and student to increase their research activities in the coming years. As previously shown, we know that members of our community have already increased their research significantly. Growing research at Brown will require targeted investments in faculty, students, staff and space, as well as resources to support research across the campus. Achieving this goal will require a significant commitment by the University.

We know that we are limited in research space on College Hill and in the Jewelry District. We know that our faculty, staff and students are already working incredibly hard on their existing research, teaching and service commitments. Accordingly, our plan seeks to maximize the effectiveness of new investments with an accompanying reduction of barriers to research and streamlining of our support processes.

## DEFINING THE GOAL

Research takes many forms and varies in structure and methods across disciplines. The research enterprise touches nearly every facet of the University, involving not only scholars in laboratories, libraries, archives, field sites, clinical settings, data centers and many other spaces, but also the students, staff experts, and technicians who work closely with researchers as well as essential administrative support personnel. Investing in and growing research will provide a broad array of benefits to the entire Brown community.

We recognize that not every discipline or support function has the same needs. To be successful, it is essential that we adopt a tailored and targeted approach for investments and measure our progress with clearly defined metrics, including:

- **Individuals Involved in Research.** Growing research will require hiring more faculty and postdoctoral researchers, enrolling more graduate students in key areas, and increasing the number of undergraduates engaged in research. In addition, more staff will be needed to support critical research administration functions, academic units across the University, and interdisciplinary research efforts. This growth in people must be targeted and appropriate by discipline. Academic departments have different needs, and we must ensure that we grow sustainably.
- **Internal Research Funding.** The University offers internal research funding awards and grants, including the Seed Awards and Salomon Awards administered by the Vice President for Research, startup funding for new faculty, and research support funds offered by individual academic units. This seed funding yields a high return on investment. For example, to date, the Seed grants have yielded a return of 13:1 in external awards. We plan to double the total internal funding available for research across the University and track the return on investment and impact of different funding mechanisms.
- **Foundation and Federal Funding.** We must expand grant funding from private foundations and corporations. The federal government also plays a critical role in funding research through the National Institutes of Health, National Science Foundation and U.S. departments of Energy, Defense and Commerce. We will measure our funding levels from these sources with an eye toward ensuring all disciplines are able to increase external research funding.
- **Research Activities.** Different fields and different departments across the humanities, social sciences, life and medical sciences, and physical sciences have their own established methods for capturing and recognizing research activity. The University will collect data from a variety of sources to track research growth across the campus, including external awards, the publication of articles and books, citations, performances, exhibitions, etc.

## WHY INVESTMENT MATTERS

As previously described, investing in and growing the research enterprise is important to ensure Brown can achieve its mission and maximize the University's impact on society. But there are also important operational and academic benefits to growth.

- **Scale.** The University's current research enterprise is below scale. There are many fixed costs to effectively engage in research — such as large pieces of laboratory equipment, special library collections and expert staff to support researchers — and the small size of the University's current research portfolio, particularly in relation to peer institutions, means that certain investments are often reduced, delayed or even deferred. The University needs to achieve a larger scale across the research enterprise to enable the critical investments needed to keep the University on the cutting edge and further increase the impact of our scholarship.
- **Academic Excellence.** In some academic disciplines, there is a correlation between the number of faculty and students and the reputation of those programs. Sometimes, there is a minimum number of people required to achieve excellence in scholarship and teaching. By adding researchers and increasing investment, Brown will be able to continue advancing academic excellence across all programs.
- **Diversity and Inclusion.** Growth means more opportunities to diversify the University's scholarly community. These opportunities will allow the University to continue its progress toward achieving the goals of the 2016 *Pathways to Diversity and Inclusion: An Action Plan for Brown University* (DIAP) by increasing the number of faculty, staff and graduate students from historically underrepresented groups.
- **Teaching and Learning.** Growing research means additional resources and innovation to support the University's teaching mission as well. Hiring additional faculty and postdoctoral researchers and enrolling more graduate students will naturally increase the number of instructors available to teach and mentor our undergraduate students. More scholarship on campus also means that instructors can leverage the knowledge they create to further innovate in their coursework and teaching.
- **Positive Impact on Providence and Rhode Island.** Finally, a broader research enterprise — with additional faculty, graduate students, postdoctoral researchers and complementary staff — will allow for an expanded positive impact within the Providence and Rhode Island communities through startups emerging from research and innovation on Brown's campus, the growth of the knowledge economy and biomedical sector in the Jewelry District, engagement between Brown's subject matter experts and local policymakers and organizations, and expanded pathways for community members historically underrepresented in research to pursue relevant educational and career opportunities.

## GUIDING PRINCIPLES FOR INVESTING IN RESEARCH

Clear and transparent principles that reflect the University's history, distinctive strengths and values will guide our proposed investments. The following three principles will guide every investment in Brown's research enterprise over the coming five to seven years:

- **Strategic Alignment.** Investments and activities must be in line with the University's strategic plan, *Building on Distinction*, and signature initiatives must align with one or more of the nine integrative scholarship themes.
- **Teaching and Learning.** Investments in research must support and uplift Brown's educational mission by ensuring students are engaged through curricular and co-curricular research experiences and by growing the number of faculty on campus who teach students in addition to performing research.
- **Diversity and Inclusion.** Investments in research activities and personnel must align with the DIAP and ensure additional hiring, enrollment and investments are targeted in ways that help achieve our goals for diversity and inclusion.

To ensure that additional investments will have the greatest effect, resource decisions across the University will be informed by careful needs assessment and benchmarking.

## FUNDING THE INVESTMENTS IN RESEARCH

Growing research will require significant investments by the University. These are necessary investments, which will be funded by a variety of new and existing sources of revenue. Given the economic situation and the impact this will have on the University's revenue streams, the University will need to phase investments over the next few years based on the available resources and prioritization of needs across campus.

- **University Funds.** We recognize that the University will need to allocate a significant operating budget to invest in and grow research. This funding will come from a combination of sources, including the University's endowment, existing gift funds and indirect cost recovery.

- **BrownTogether Campaign.** The three-year, \$1 billion extension of the highly successful *BrownTogether* campaign will provide philanthropic funding to support research growth initiatives. We anticipate that further funding after the campaign extension will continue to support Brown's research growth in the years to come.
- **Federal Grants.** The University generates over \$200 million each year in external funding, largely from federal funders, and the University will ideally grow that funding significantly over the coming five to seven years. With an increase in grant funding and expected increases in the costs of facilities and administrative support, the University will also generate significantly more funds through indirect cost recovery — which is calculated as a percentage of direct grant revenue.
- **Foundation Funds.** Grants and contracts from nonprofit foundations are a critical source of research funding, particularly in the humanities and social sciences. Though Brown maintains strong partnerships with many of the leading foundations, the University receives less foundation funding than all of our peer institutions, as shown in Figure 6. The University will invest in these partnerships in order to procure more foundation funding for research.

## RESEARCH COLLABORATION WITH BROWN'S AFFILIATED HEALTH SYSTEMS

Brown's health system affiliates — Lifespan, Care New England and VA Providence — are important collaborators in the University's research enterprise. However, we do not have a single, robust research support infrastructure that serves Brown, our nonprofit health system partners and — more specifically — our faculty. This creates significant administrative hurdles for researchers, increases expenses and inefficiencies and hampers our ability to secure large-scale grants that require cross-institutional collaboration. We aim to harmonize research administration and supports for the Division of Biology and Medicine, the School of Public Health and our clinical partners so that we can:

- improve the research experience for our faculty by investing in and streamlining research administration (e.g., IRB, grant management, purchasing, cores);
- expand the scale and impact of biomedical and health sciences research; and
- increase external grant funding in biomedical and health sciences that will benefit the health of people in Rhode Island, nationally and globally.

### The Strategy

The strategy for investing in research balances common needs that benefit disciplines and scholars across the entire University — infrastructure, space, systems improvements, training and development, etc. — with targeted seed investments in signature research initiatives that align with Brown's strengths and strategic priorities.

The following sections outline a series of proposed investments based on feedback from the community and discussions with leaders of various academic units and administrative offices. Additional investments will be added over the coming five to seven years based on additional information, expressed needs and available funding.

- **Investing in Our People.** Growing our research enterprise across disciplines will require significant investments in faculty, students and staff — including hiring or enrolling more people and investing in our current people through policy changes, training and development opportunities, and process improvements.
- **Investing in Our Space.** The University has several significant space needs across campus. Many academic units are either out of space or in need of upgrades to their existing spaces. Investing in our physical infrastructure will require hundreds of millions of dollars over the coming years. This work will require significant time and appropriate prioritization, planning and design.
- **Investing in Administrative and Support Services.** The University needs to improve and invest in the resources and services that support the research enterprise — from direct support through the libraries and research computing to administrative support for hiring and grants management.
- **Investing in Signature Research Initiatives.** The University will implement a process to solicit proposals for areas for research initiatives that would further existing areas of strength at Brown. The process for proposing new signature research initiatives and a list of examples from an array of disciplines are highlighted later in this Operational Plan. These examples are not meant to be an exhaustive list of all research initiatives in which the University will invest.

## INVESTING IN OUR PEOPLE

---

The University typically employs around 800 regular faculty members across the humanities, life and medical sciences, social sciences and physical sciences, plus an additional 700 research, adjunct and visiting faculty members. The University also employs nearly 300 postdoctoral researchers across all disciplines and a similar number of staff members directly supporting research. Roughly 1,500 Ph.D. students are enrolled in various graduate programs at Brown.

Growing Brown's research enterprise will require significantly more people to write grant proposals, perform research and produce scholarship. This means increases in:

- tenure-track and research faculty;
- staff researchers and administrators;
- graduate students, specifically Ph.D. students;
- postdoctoral researchers; and
- undergraduate research assistants.

Investments and growth in people will not be uniform across these different categories of researchers. The growth in tenure-track faculty will be relatively small and limited. Instead, most of the growth in people engaged in research will come from graduate students, postdoctoral researchers and research faculty who are supported by external research grants. An increase in undergraduate research assistantships will also be supported by a combination of external grants and philanthropic gifts.

Growth will also not be uniform across disciplines. While we know that some units — such as the School of Engineering — will likely need to expand graduate student enrollment, other disciplines — such as those in the life and medical sciences — may need to grow their postdoctoral researchers more than their Ph.D. students. We similarly heard from some humanities faculty that additional undergraduate research assistants or teaching assistants would be most helpful in terms of increasing their scholarly activity.

Academic departments have different needs, and we must ensure that we grow the number of people engaged in research ethically and sustainably. This means that employees hired and students recruited must have clear pathways for career development to meet their professional goals and that the University must be able to fund growth responsibly.

The investments and growth in people will require significant funding support through philanthropy, external grants and University sources. Fundraising for endowed chairs will continue to be a top University priority. Additionally, in the initial stages of executing this Operational Plan, we will need to dedicate philanthropic funds and some central funds to hire the people who will prepare grants and jump-start research in new areas. (Some of this funding would be included in faculty startup packages.) In addition, the growth in graduate students, postdoctoral scholars and research staff will need to be factored into our capital plans and student support services. Financially responsible growth in people will be supported by careful multi-year budgeting and planning efforts that are currently being refined.

### Regular Faculty

The University has been steadily growing its faculty across most disciplines to support the world-class education and research for which Brown is known and has been investing in support for faculty to conduct research. Since the launch of *Building on Distinction*, the University grew the total number of regular faculty<sup>13</sup> on campus by 11%. While we anticipate additional investments in and growth of regular faculty, it will be targeted based on discipline and philanthropic support.

The University has also tied incremental growth of tenure-track faculty to specific strategic priorities outlined in *Building on Distinction* and supported by newly established endowed professorships raised during the *BrownTogether* campaign. This is how we plan to continue to grow our tenure-track faculty over the next five to seven years.

### FACULTY TIME

We know that the most precious resource for faculty — particularly in terms of conducting research — is time. The University has invested significantly over the past few years to free additional time for faculty to generate new knowledge and scholarship.

---

13 The [Handbook of Academic Administration](#) defines regular faculty as campus-based faculty holding the titles of Instructor, Assistant Professor, Associate Professor, Professor, Lecturer, Senior Lecturer, or Distinguished Senior Lecturer without prefixes or parenthetical suffixes.

In particular, the University recently:

- transitioned all tenure-track faculty who had taught four courses per year to a three-course teaching load; and
- allowed tenure-track faculty to cluster the courses they teach into one semester to allow for a concentrated focus on research when they are not teaching.

These changes represent a significant investment by the University, which has continued to provide exceptional undergraduate and graduate teaching and a low faculty-to-student ratio. It has also made Brown a national leader and innovator in the humanities and qualitative social science fields.

The University also recognizes the importance of internal funding to help faculty leverage their time by supporting graduate and undergraduate students, postdoctoral researchers and staff positions. The Investing in Administrative and Support Services section of this document outlines additional investments for internal research funding.

### POST-TENURE SABBATICAL POLICY

The University currently offers generous leaves to assistant professors prior to receiving tenure and associate professors who recently received tenure. In the coming year, the University will enhance the sabbatical policy for already tenured faculty by increasing the level of compensation those faculty receive for sabbatical from 75% of their salary to 100% of their salary, as illustrated in Figure 7.

Figure 7: Illustration of Change in Post-Tenure Sabbatical Policy

CURRENT POLICY	NEW POLICY
After six semesters of credit, tenured faculty will receive one semester of sabbatical at:	After six semesters of credit, tenured faculty will receive one semester of sabbatical at:
<b>75% of their normal compensation</b>	<b>100% of their normal compensation</b>

Given the importance of sabbatical time for dedicated focus on research and scholarship, Brown leadership committed to reviewing the current policy after the initial draft of this Operational Plan was released, and the University identified the funds to cover the significant costs of this policy change.

### FACULTY DEVELOPMENT PROGRAMS

We recognize that faculty members face demands on their time for teaching, research, service and administrative matters. To help faculty members advance their careers and support their scholarship, the University will coordinate central mentoring, training and development programs focused on:

- developing research proposals and applying for external grant funding, including large center and training grants;
- supporting writing workshops for both junior and senior faculty members;
- managing external grants and internal funding, including startup funds;
- maintaining technical skills required to stay abreast of new developments in science and technology; and
- leading and managing teams of researchers, especially laboratory teams.

These programs will provide faculty members with the skills, tools and resources to manage the multiple demands on their time and advance their scholarship.

### Research Faculty

Over the coming years, we anticipate significantly investing in and growing our research faculty.

These positions are largely funded and supported through external grants, though some are partially supported by gift or endowment accounts, with an expectation that over time research faculty members develop their own portfolios and begin building their own research teams.

The University currently employs roughly 160 research faculty members — roughly evenly split between faculty on the Research Scholar track and faculty with “parens” research appointments.<sup>14</sup> While the majority of these research faculty are

14 “Parens” research appointments mean that the faculty members are titled with (Research) at the end of their title; for example: “Professor of Applied Mathematics (Research)”

dedicated to the School of Public Health and the Division of Biology and Medicine, we are increasingly seeing these faculty hired to support research in academic units in the social sciences such as in the Population Studies and Training Center, the Institute at Brown for Environment and Society and the Watson Institute for International and Public Affairs; physical science departments including Applied Math, Physics, and Earth, Environmental and Planetary Sciences; and the School of Engineering.

We recognize that the University must invest in this population both to increase the number of research faculty members on campus and to ensure they are supported by the University. In particular, the University will convene a Research Appointments Work Group in the next few months, led by the Dean of the Faculty and focused on:

- reviewing the structure and terms for research faculty appointments (e.g., research scholars, “parens” research faculty), with a particular focus on ensuring consistency and equity across academic units;
- developing a clear career ladder for research faculty with an explanation of the expectations and benefits of the different levels;
- evaluating the level of base funding for salary and research expenses that should be offered to research faculty by the University or individual academic units, recognizing that there may need to be a minimum threshold and flexibility; and
- identifying other resources or support for research faculty to ensure they are treated equitably and supported in achieving their professional goals.

## Staff

The University employs more than 3,100 staff members across campus. There are twice as many staff members as there are Ph.D. students and 50% more staff than faculty. While many staff members are engaged in supporting Brown’s educational programs, a large number supports the research enterprise as well. This includes administrative and academic support staff; research support staff who provide critical services to faculty, staff and students conducting or directly engaged with research; and staff researchers who are directly engaged in performing research activities and supporting faculty researchers. We estimate that more than 80% of Brown’s 3,100 staff employees are engaged in or support the research enterprise.

University leadership recognizes that staff members across the institution have been working incredibly hard especially over the course of the pandemic and that many teams are currently understaffed. To help support our staff and achieve our growth goals, the University will invest in the staff across campus — both by adding more staff members and helping to develop and support our current staff.

### ADMINISTRATIVE AND ACADEMIC SUPPORT STAFF

The Investing in Administrative and Support Services section of this document highlights several administrative and support functions in the University, such as research administration and the University Library, which will need to grow and scale to accommodate the larger research enterprise. However, Brown will need to scale and hire additional administrative and academic support staff members broadly across campus — from the academic departments, centers and institutes to the central administrative units. This includes:

- Human Resources, Faculty Affairs and Student Affairs staff to support the growing number of faculty, research staff, postdoctoral researchers and graduate students;
- Facilities and Maintenance staff to support the additional laboratory and office space that will be needed on campus for the larger research enterprise;
- Finance staff to support the increased level of purchasing, invoices, gift/endowment funds and financial planning/reporting associated with a larger volume of research activity;
- Communications and Events staff to support research conferences and scholarly engagement with external communities through written communications and media; and
- Staff members in academic units such as departments, centers and institutes who directly support faculty, students and staff researchers conducting research.

The University will regularly evaluate administrative and academic support staffing levels and determine hiring needs during the annual budgeting process.

## RESEARCH STAFF

In addition to administrative support staff, staff positions that directly engage in research are increasingly common at universities across the country, particularly in larger laboratory settings in the life and physical sciences. These staff positions are almost always funded by external grants and often require relevant experience with research at the undergraduate and graduate levels. There are two types of staff research positions:

- **Research Support Staff.** Brown currently employs over 300 staff involved in supporting and managing research programs led by faculty members.<sup>15</sup> Their titles range from Research Assistant and Research Associate to Laboratory Manager and Laboratory Coordinator. Most of these positions do not require a Ph.D. but do require relevant work and research experience. We anticipate that there will need to be significant growth in these positions, commensurate with the investments in and growth of our research enterprise.
- **Staff Researchers.** Many peer institutions have established positions classified as Staff Researchers, Staff Scientists or Research Scientists for individuals who have already received their Ph.D. and often have completed a postdoctoral fellowship. These positions are embedded in laboratory teams, most often in the life and medical sciences, and are often on fixed-term appointments that align with grant funding. These researchers have higher qualifications than research support staff and may be supervised by research faculty or regular faculty. Brown has historically not embraced these types of positions. Only a handful of Staff Scientists are currently employed by the University.<sup>16</sup>

The need for both of these research staff populations has been highlighted by faculty and academic leadership across the University. To support our research staff and achieve our goals, the University will charge the previously mentioned Research Appointments Work Group with the following:

- determining a standard and consistent set of job titles, job responsibilities and job descriptions that can be adapted by academic units based on their individual needs;
- establishing a clear career ladder for research staff members, including options to continue as staff or transition into available faculty positions;
- establishing consistent policies and practices for hiring research staff in the future;
- evaluating the professional development resources that should be offered to research staff members by the University or individual academic units; and
- identifying other resources or support for research staff members to ensure they are treated equitably and supported in achieving their professional goals.

Additionally, the University is working to build capacity and expertise in University Human Resources to ensure we can adequately hire, support and standardize research staff positions across academic units.

## TRAINING AND DEVELOPMENT

Based on feedback from staff members across the University, we know that there is not a clear understanding of the University's administrative and research-related processes. Sometimes that is because the procedures are not well documented, and in other cases it is because the central teams supporting those functions do not have adequate staff to communicate or train others on their processes. The Investing in Administrative and Support Services section highlights some investments in systems and process improvements, and the University will additionally invest in:

- **Process Documentation.** All major offices will be asked to document their processes and develop public materials that can be shared to educate staff across the University.
- **Training Programs.** Central administrative offices will be charged with developing and maintaining training programs for new and existing staff members across the University, explaining standard operating procedures and outlining major administrative processes.

---

15 Data from the [Office of Institutional Research Employees Factbook](#)

16 Data from Workday as of March 2022



- **Development Opportunities.** The University will invest in identifying opportunities for professional development, such as cross-training with other offices, rotational work programs and networking with administrative staff across the University.

Recognizing that developing these programs will further tax central offices that are already understaffed, the University will offer resources to support these efforts. The Executive Vice President for Finance and Administration will be leading and overseeing these efforts.

### Ph.D. Students

Brown has historically had one of the smallest populations of graduate students among our peer group. Figure 8 illustrates the breakdown of Ph.D. students by academic division during the Spring 2022 semester. The physical sciences have the most Ph.D. students and the largest programs on average, with the largest — Computer Science — enrolling around 100 total students.<sup>17</sup>

Though enrollment statistics are difficult to compare across institutions, we know that Brown is significantly under scale in terms of Ph.D. students. One way of illustrating this point is to compare the ratio of Ph.D. students to faculty. Figure 9 illustrates that Brown is significantly smaller than most of its peers in terms of Ph.D. student enrollment and the number of Ph.D. students per faculty member. There are differences in terms of the relative number of Ph.D. students across Brown’s programs, but the overall size of this population is telling and illustrates the need for investment in additional Ph.D. students to support the growth of research.

Figure 8: Enrolled Ph.D. Students at Brown University by Academic Division (2022)

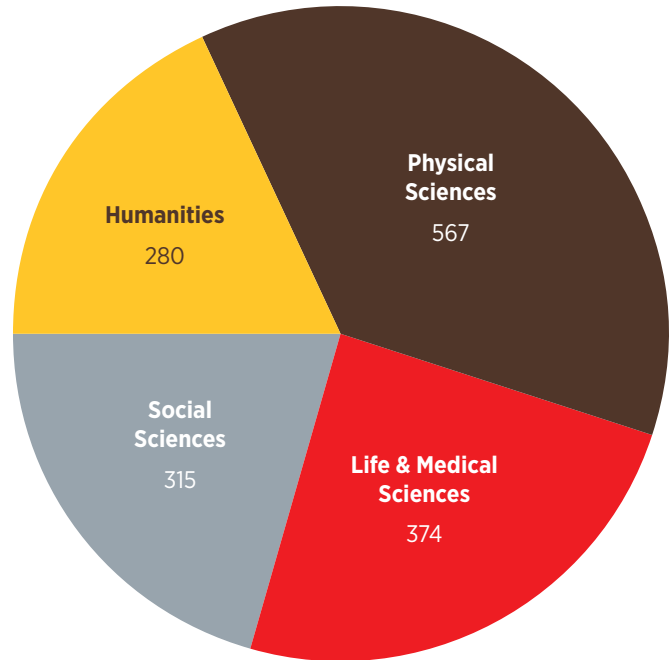
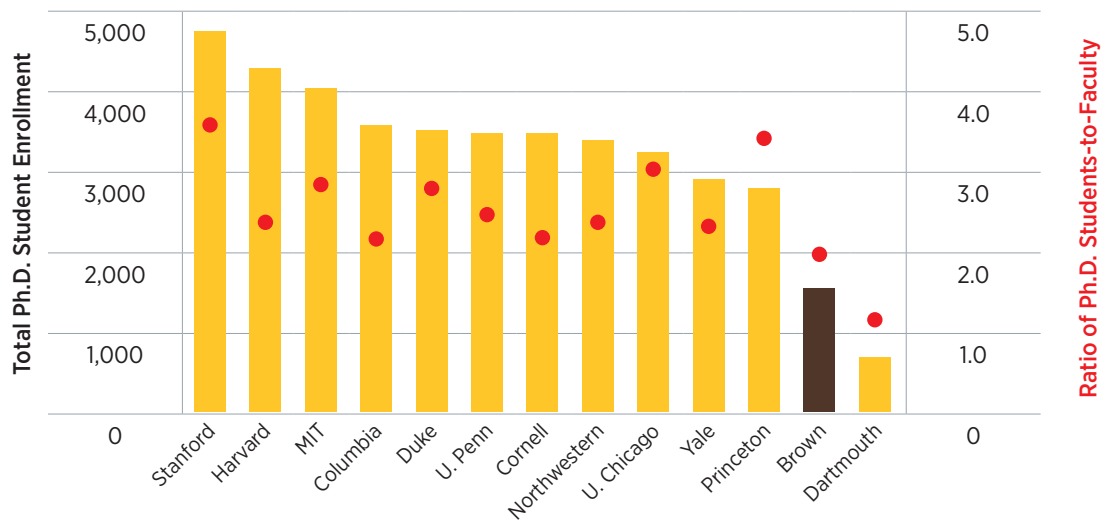


Figure 9: Ph.D. Enrollment compared to Faculty Headcount at Brown and Select Peers (2020-21)<sup>18</sup>



## ANALYSIS AND PROJECTIONS

17 Data from Banner in February 2022

18 Data from institutional websites as of the 2021 fall semester and Academic Analytics

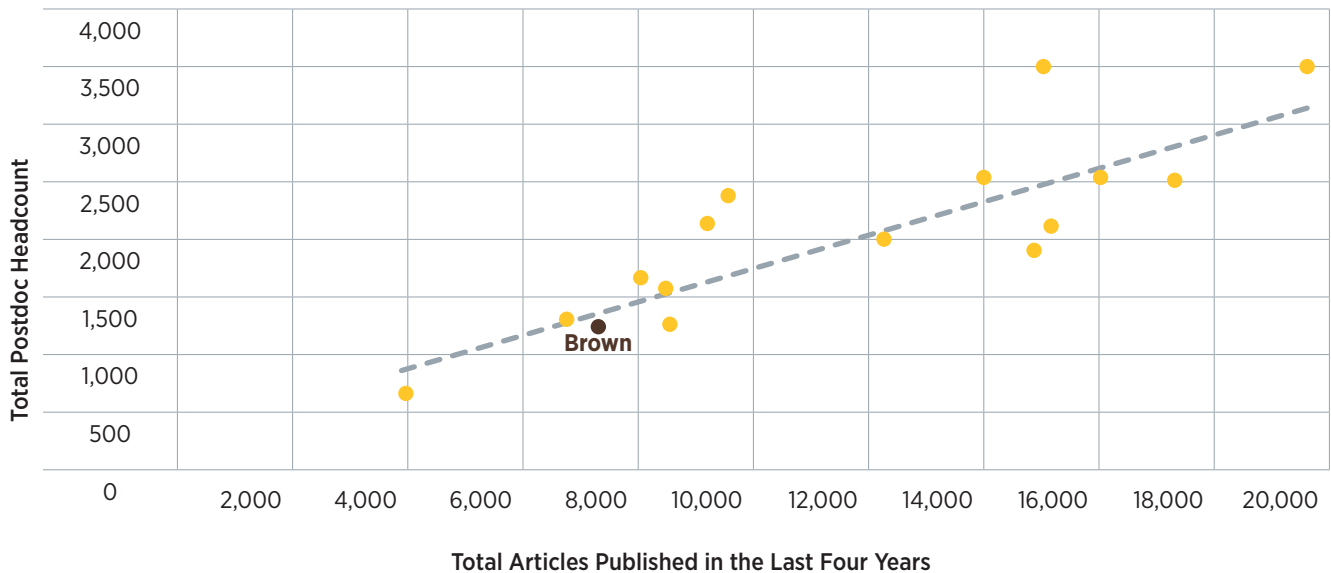
We know that growth of graduate student enrollment must be tied not only to our research goals but also to the desired career opportunities of our graduate students following the completion of their training. For example, there are several disciplines in the humanities where additional growth would be challenging given the difficult academic job market for graduates of those programs and the fact that our graduate students in the humanities aspire primarily to academic positions. We also assume that most of the incremental growth in Ph.D. enrollment will be funded largely through external grants or philanthropy, with the exception of the students' first or second years of training, when the University provides fellowship funding. We therefore assume that much, though not all, of the growth in Ph.D. enrollment will be focused in the life, physical and social sciences. However, the University will continue to invest in research and development opportunities for Ph.D. students in the humanities through increased research/travel funds, interdisciplinary collaborations through the Open Graduate Education program, and improved access to support and resources from the University Library.

To indicate the significance of doctoral students for the research enterprise, we have identified two ways of comparing the size of Brown's Ph.D. student population with the same population at 15 peer institutions: comparing the number of Ph.D. students to the number of articles published and comparing the number of Ph.D. students to total research expenditures in the STEM fields. By analyzing these data, we see that Brown is roughly where we would expect it to be given the size of our current research enterprise.

Figure 10 illustrates the relationship between the number of Ph.D. students and the total articles published by faculty at each institution over the last four years, with a strong correlation between the two. While using articles as a proxy for research activity leaves out the central role of books in some disciplines, the same measure is being used across institutions and should not therefore significantly privilege any one institution. Additionally, we see similar correlation and trends for other indicators of research activity, such as books, citations, etc.

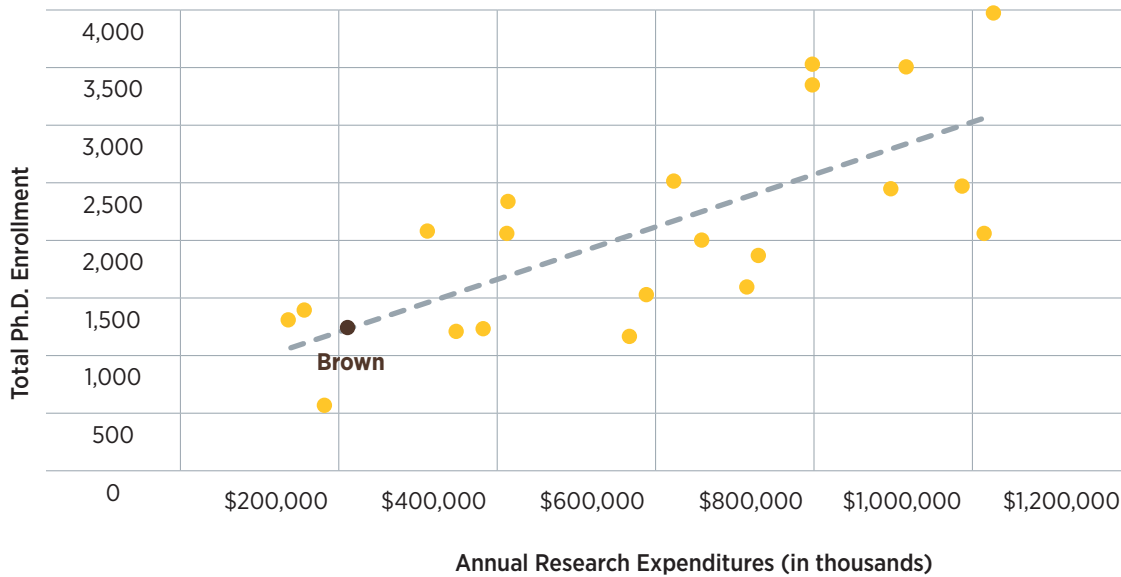
Similarly, Figure 11 illustrates the relationship between the number of Ph.D. students and total research expenditures in the life, physical and social sciences at each institution based on self-reported data collected by the National Science Foundation.

**Figure 10: Relationship between Ph.D. Enrollment and Total Articles Published in the Last Four Years at Brown and 15 Peer Institutions (FY20)<sup>19</sup>**



19 Data from the 2020 Higher Education Research and Development Survey and Academic Analytics

Figure 11: Relationship between Ph.D. Enrollment and Research Expenditures in the Life, Physical and Social Sciences at Brown and 15 Peer Institutions (FY20)<sup>20</sup>

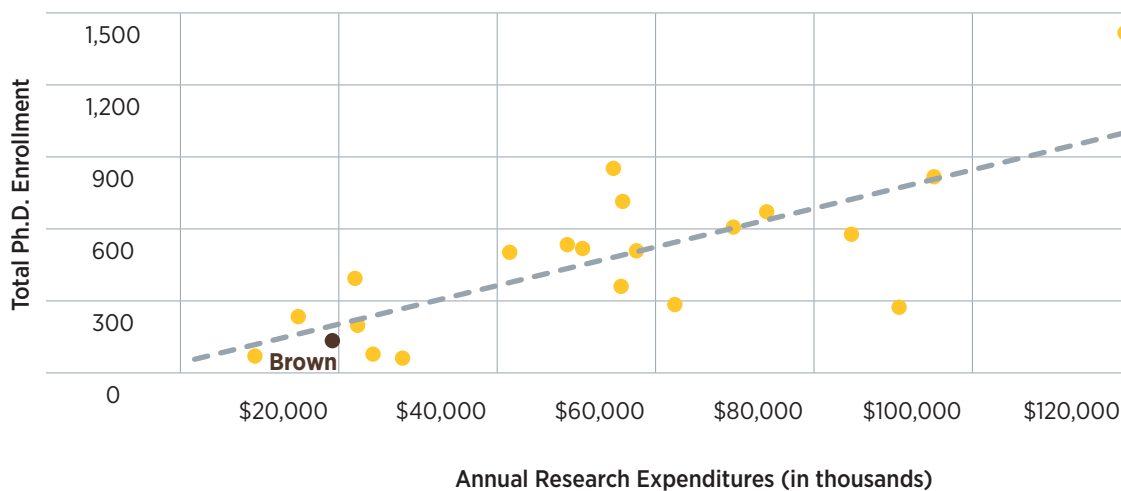


By analyzing these data using a simple regression analysis, we can estimate that the University would need to enroll more Ph.D. students over time to support the growth of research activity across the institution. This analysis is directional at best but helps to illustrate the investment required for growing the Ph.D. student population in support of our goals to grow research.

**DISCIPLINE-SPECIFIC GROWTH**

Certainly, there are differences across the disciplines — even in the current state. For example, despite having the largest doctoral program at Brown, the Department of Computer Science has the lowest Ph.D. student-to-faculty ratio among its peer institutions — 3:1 compared to 4:1 on average.<sup>21</sup> Brown’s School of Engineering has roughly 150 Ph.D. students but is well under the expected number of students given its current research portfolio. Analyses of National Science Foundation data highlighted in Figure 12 suggest that the School of Engineering could enroll another 50 Ph.D. students given its current research portfolio and would need to grow its Ph.D. student population as it grows its research portfolio.

Figure 12: Relationship between Ph.D. Enrollment and Research Expenditures in Engineering (FY20)



20 Data from the 2020 Higher Education Research and Development Survey and the Survey of Graduate Students and Postdoctorates in Science and Engineering

21 Benchmarking data from Ivy League computer science departments, Fall 2021 semester

## GROWTH NEEDS

To support such a large expansion of Ph.D. students, the University will need to increase the amount of funding available for doctoral fellowships and adjust the process through which Ph.D. support is allocated across departments to allow for greater flexibility at the level of individual schools, departments and programs.

The report of the Task Force on Doctoral Education, which worked over the past year, has made additional recommendations on how to strengthen our graduate programs.

### Postdoctoral Researchers

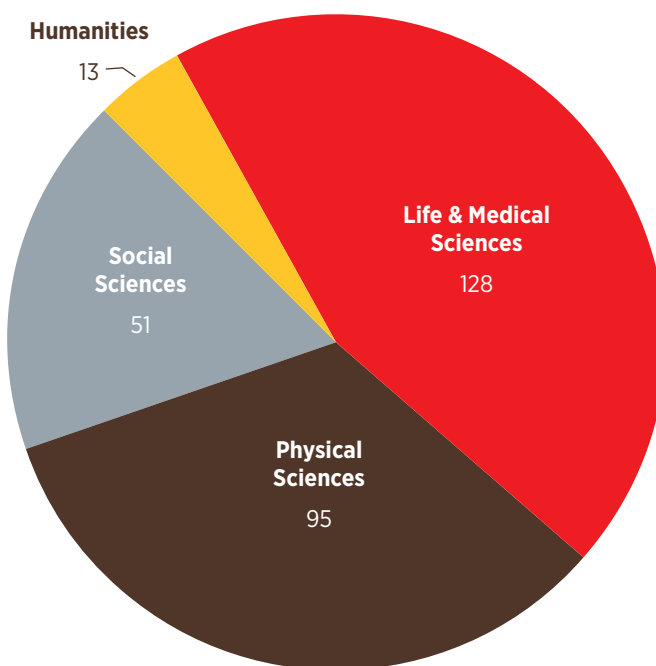
Postdocs are central to the research enterprise of all universities, but Brown has historically had a very small population of postdocs. During the Spring 2022 semester, Brown employed roughly 285 postdoctoral researchers. Figure 13 illustrates the breakdown between academic divisions, with nearly half in the life and medical sciences and one-third in the physical sciences.<sup>22</sup>

Postdoctoral researchers are often recent graduates of terminal degree programs who serve on limited-term appointments supporting individual faculty members while building their own research portfolios. These appointments provide important opportunities for postdocs to further develop their research skills and scholarship before taking jobs as faculty members and staff researchers and in a variety of non-academic professions.

Postdocs are increasingly important across disciplines, including the humanities and social sciences, given that they help promising junior scholars develop their own research programs before starting in faculty positions and further contribute to innovation and interdisciplinarity across the divisions. Notwithstanding Brown's small population of postdocs, the University has several long-standing and successful postdoctoral programs across disciplines, including:

- the postdoctoral fellowship program at the Joukowsky Institute for Archaeology and the Ancient World, which was founded in 2006 and typically hires four junior scholars each year;
- two postdoctoral fellowship programs hosted by the Cogut Institute for the Humanities, which are jointly sponsored with academic departments;
- the postdoctoral fellowship program at the Watson Institute for International and Public Affairs, which supports 15 or more postdocs;
- several institutional training grant programs funded by the National Institutes of Health in the School of Public Health and the Division of Biology and Medicine; and
- postdoctoral research associate positions in faculty laboratories across the life and medical sciences, physical sciences and the School of Engineering.

Figure 13: Postdoctoral Researchers at Brown University by Academic Division (2022)



22 Data from Workday as of Spring 2022

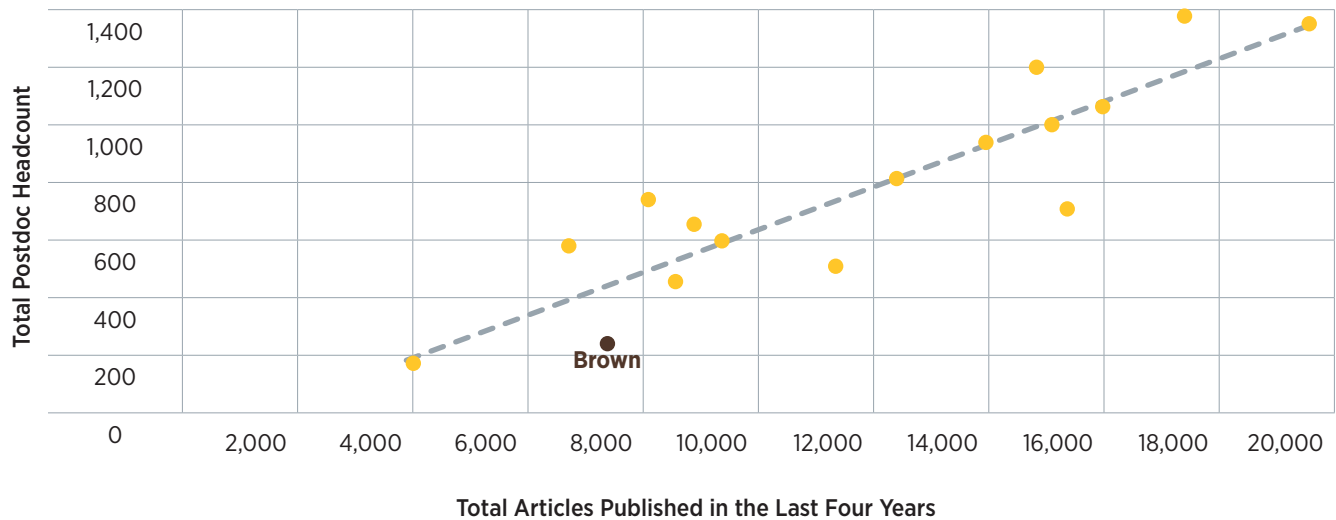
## ANALYSIS AND PROJECTIONS

We know that Brown's postdoc population is smaller than peers in relative and absolute terms, even when accounting for the level of research conducted at Brown. For illustrative purposes, we have identified two means of comparing the size of Brown's postdoc population with the postdoc population at 15 peer institutions: comparing the number of postdocs to articles published by faculty at each institution and comparing the number of postdocs to total research expenditures in the STEM fields at each institution.

Though we recognize that several factors influence the number of articles published — particularly the number of faculty at each institution — we also know that postdocs can positively influence the volume of scholarly publications in several meaningful ways: postdocs themselves publish articles, postdocs can free up faculty time for research by taking on teaching responsibilities, postdocs can mentor and support undergraduate or graduate students supporting faculty-led research programs, and postdocs can directly support research led by faculty members.

Figure 14 illustrates the relationship between postdocs and article publications, with a fairly close correlation between the two variables. Based on this analysis, we find that Brown is under scale and has roughly 45% fewer postdocs than we would expect given our current level of publications.

**Figure 14: Relationship between Postdoctoral Researchers and Total Articles Published in the Last Four Years at Brown and 15 Peer Institutions (FY20)<sup>23</sup>**

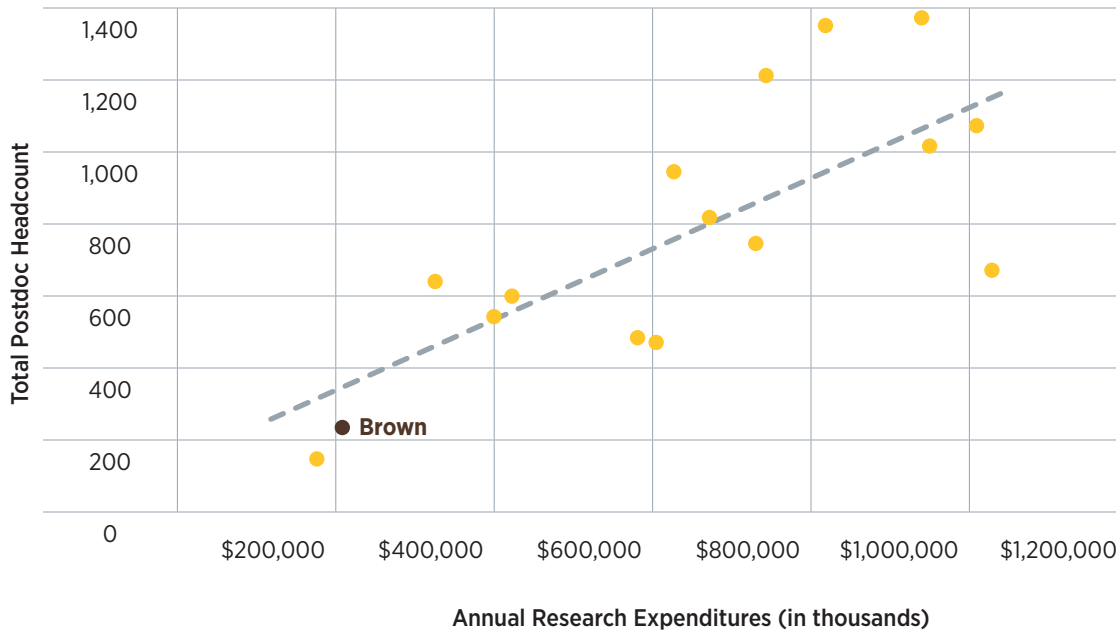


Given that most, though not all, postdoctoral researchers are supported by grant funding, there tends to be a strong correlation between research expenditures and postdocs as well. By comparing total research expenditures at Brown and 15 peer institutions against the number of postdoctoral researchers in the life, physical and social sciences, we find that Brown is under scale and has roughly 30% fewer postdocs than we would expect given the size of our current research enterprise.

Figure 15 illustrates the relationship between these two metrics based on self-reported data collected by the National Science Foundation. There is a strong correlation, which illustrates how necessary postdocs are in the research enterprise.

23 Data from the 2020 Higher Education Research and Development Survey and Academic Analytics

Figure 15: Relationship between Postdoctoral Researchers and Research Expenditures in the Life, Physical and Social Sciences at Brown and 15 Peer Institutions (FY20)<sup>24</sup>



### DISCIPLINE-SPECIFIC GROWTH

We recognize that the need for postdoctoral researchers differs across the disciplines, and this growth will not be uniform across the University. For example, based on peer benchmarks, the School of Engineering should ideally aim for an average of one postdoctoral researcher for every faculty member.<sup>25</sup> By contrast, laboratories in the life and medical sciences — particularly in the five biology departments in the Division of Biology and Medicine — have a much higher need for postdoctoral researchers. Some estimates based on peer benchmarking show that individual principal investigators might need an average of three postdocs to support their research. Brown is currently around one-third to one-half that level.

### GROWTH NEEDS

Based on our preliminary analysis, we anticipate the need to increase the number of postdocs across disciplines. Given that most postdocs are supported through external grant funds or dedicated gift/endowment accounts, growing the population will require faculty to include more postdoc positions in grant proposals and future fundraising plans.

We also want to embrace this opportunity for Brown to become a destination for the development of high-potential postdoctoral researchers. The newly created Office of University Postdoctoral Affairs has identified several initial needs to help attract postdocs and build a supportive community for postdocs while in residence at Brown. These include:

- defining possible career pathways for postdocs at Brown, such as moving into regular/tenure-track faculty appointments, research faculty appointments and research staff positions depending on their qualifications and disciplines;
- standardizing and expanding recruitment and marketing practices across disciplines to generate greater interest in postdoc opportunities at Brown;
- soliciting additional funded postdoc opportunities from academic units across the institution;
- developing common programming, mentorship and training opportunities focused on the development of technical skills, leadership skills, grant writing and other relevant topics;
- evaluating the compensation levels and funding for research expenses for postdocs, recognizing that there may need to be a minimum threshold and flexibility; and
- identifying other resources or support for postdocs to ensure they are treated equitably and supported in achieving their professional goals.

<sup>24</sup> Data from the 2020 Higher Education Research and Development Survey and the Survey of Graduate Students and Postdoctorates in Science and Engineering

<sup>25</sup> Benchmarking data from Ivy League schools of engineering, 2021

The previously mentioned Research Appointments Work Group will also examine some of these concepts alongside the structure for research faculty appointments and research staff positions. These efforts will require additional institutional funds but will have a high return on investment given the need to sharply grow this population in the future.

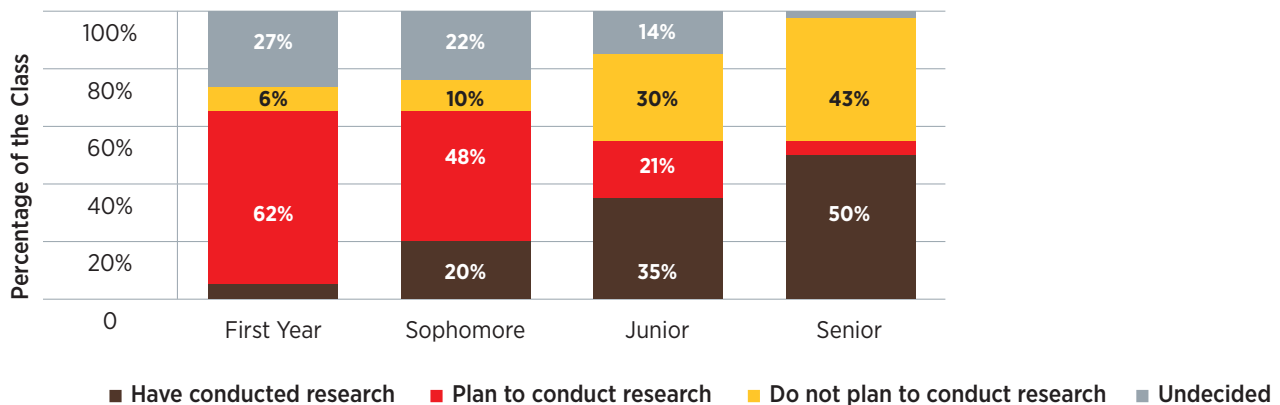
## Undergraduate Research

Undergraduate students at Brown have a long history of engaging in research with faculty through a variety of programs, including:

- the Karen T. Romer Undergraduate Teaching and Research Award program (UTRA), which now is part of the Summer and Semester Projects for Research, Internships and Teaching (SPRINT) program;
- numerous undergraduate fellowship programs — such as Royce Fellowships, Voss Undergraduate Research Fellowships and the John Hay Library Undergraduate Fellowships — that support student research with faculty, staff and community partners;
- Collaborative Research and Scholarly Experiences (COEX) courses, which enable groups of students to directly engage in research and scholarship;
- faculty-led research grants from the federal government and other sources, including supplements to existing grants specifically geared toward creating research experiences for undergraduates; and
- senior thesis projects that often require research experiences with faculty.

By the end of their time at Brown, 50% of undergraduate students report that they engaged in research with a faculty member, with 92% reporting that they were “generally satisfied” or “very satisfied” with the experience. In addition, 44% of students report engaging in other research experiences (not with faculty) at some point in their time at Brown.<sup>26</sup> However, as shown in Figure 16, students tend to engage in research later in their time at Brown — primarily in their junior and senior years. We also see a significant drop in the number of students interested in conducting research over their time at Brown.<sup>27</sup>

**Figure 16: Proportion of Undergraduates Involved in Research (2021)**



Most students who engage in research do so during the summer rather than during the fall or spring semesters. The number of applications for UTRAs — a majority of which are geared toward research — for the 2021-22 academic year illustrate this trend. Over 800 students applied for summer UTRAs compared to roughly 75 student applications for the fall semester and slightly under 200 for the spring semester. This academic year also represented the highest volume for fall and spring semester applications — prior to the pandemic, on average only 30 students applied for opportunities each semester. This trend is driven by the number of opportunities offered by faculty during the academic year, available funding for semester research opportunities and awareness of these opportunities by students.

As part of this Operational Plan, we aspire to meet the following goals:

- expand the opportunities for undergraduate students to engage in research so that more students who intend to conduct research have the opportunity to do so by the time they graduate;
- more than double the number of opportunities for research in the fall and spring semesters; and
- accelerate current trends so that more students engage in research during their first or second years at Brown.

<sup>26</sup> Data from the [2021 Senior Survey](#) conducted by the Office of Institutional Research

<sup>27</sup> Data from the [2021 Enrolled Student Survey](#) conducted by the Office of Institutional Research

## INVESTING IN OUR SPACE

To grow our research enterprise, the University needs to invest in additional and upgraded space for research across a number of disciplines. As a result, Brown is in the midst of several building projects and space planning studies to evaluate the needs and current spaces across campus.

**Table 1: Space Allocation for Research and Educational Programs by Academic Division (2022)<sup>28</sup>**

ACADEMIC DIVISION	ASSIGNABLE SQUARE FEET	BUILDINGS <sup>29</sup>
Humanities <sup>30</sup>	342,271	40
Social Sciences	181,341	36
Life & Medical Sciences	407,142	18
Physical Sciences	444,804	24

Brown allocates 1.3 million assignable square feet (ASF) in more than 100 buildings across College Hill and the Jewelry District for research and academic programs, with roughly 880,000 ASF of that space used for externally funded research. This is significantly smaller than many peer institutions. In 2021, the Finance Division, Department of Facilities Management, Office of the Provost and Office of the Vice President for Research conducted a study of all research spaces, which highlighted that Brown uses its research spaces very efficiently but that new research facilities are needed to accommodate even existing research projects. Table 1 illustrates the use of space across campus by academic division.<sup>31</sup>

### ANTICIPATED SPACE NEEDS

While we anticipate the need to add several hundred thousand square feet of new research space, we also recognize the need to address deferred maintenance of existing research facilities. There are also opportunities to maximize existing research space through targeted reconfiguration or renovation.

Construction and renovation of research space will be the most expensive aspect of this Operational Plan, with tentative “all-in” estimates ranging from \$700 million to \$800 million. The University will fund these capital projects over the coming decade through a combination of debt, fundraising and, possibly, partnerships with other institutions. Ongoing operating and maintenance costs would add between \$7 million and \$9 million per year to the operating budget, though most of these costs will eventually be funded through indirect cost recovery from grants.

Given the uncertain economic situation and the impact that will have on the University’s fundraising and endowment returns, the University will need to phase capital projects over the next few years based on the available resources and prioritization of needs across campus.

### SPACE ALLOCATION AND CAPITAL PLANNING PROCESSES

All capital projects will follow the University’s usual capital planning processes, will be evaluated against the previously identified guiding principles for investing in and growing Brown’s research enterprise, and must align with the University’s long-term priorities and plans. Although we have a bold agenda for research, it is essential to protect the long-run financial health of the University. The University will also leverage design principles that maximize the flexibility of space, including shared/communal facilities and modular construction to allow efficient reconfiguration.

In the sections that follow are initial lists of known capital projects related to research. Please note that these do not reflect a comprehensive list of all capital projects. During the process of collecting feedback on the draft Operational Plan, we learned of other space needs by academic units across the University. We expect that additional capital projects will likely be added to the current lists in this document over the coming five to seven years based on evolving priorities and available funding.

<sup>28</sup> The four academic divisions are named and defined on page 161 of the [Faculty Rules and Regulations](#)

<sup>29</sup> Some buildings are used by more than one academic unit or division.

<sup>30</sup> Includes the Lindemann Performing Arts Center, which will be opened in Fall 2023

<sup>31</sup> Data from the Planon database maintained by Facilities Management



## Humanities

The 20 departments in the humanities occupy a wide array of spaces across campus, from the cluster in the heart of campus near College Green — Classics, Egyptology and Assyriology, Religious Studies, East Asian Studies and the Joukowsky Institute — to the music facilities centered on Young Orchard Avenue and the burgeoning arts district emerging on Angell Street.

Several prominent interdisciplinary institutes and centers also have significant space for research and teaching on campus, including:

- The Brown Arts Institute, which coordinates academic and artistic programming at Brown from its home in the Perry and Marty Granoff Center for the Creative Arts, the David Winton Bell Gallery and the soon-to-be completed Lindemann Performing Arts Center; and
- the Joukowsky Institute for Archaeology and the Ancient World, which moved into Rhode Island Hall on College Green in 2009.

The University has invested hundreds of millions of dollars in space for the humanities in recent years — especially in the Lindemann Performing Arts Center and Granoff Center for the Creative Arts — and we plan to continue to invest in space for research and innovation in the humanities and the arts over the next five to seven years, as outlined in Table 2.

**Table 2: Capital Projects for the Humanities Currently Under Consideration**

FACILITY/UNIT	STATUS	DESCRIPTION
Lindemann Performing Arts Center	Under construction	This new building will support performance, teaching and research for music, theater and dance — along with the creation and staging of experimental, collaborative and engaged performance work.
Andrews House (Cogut Institute for the Humanities)	Renovation approved to begin in 2022	With the opening of the new Sternlicht Commons and Brown University Health and Wellness Center, Andrews House has been vacated by University Health Services and will be renovated for the Cogut Institute, with dedicated office space for faculty, fellows, postdocs and graduate students. The new space will include collaborative spaces and exceptional facilities for events and seminars.
Churchill House (Africana Studies/Rites and Reason Theatre)	Under construction	This project will expand and transform Churchill House into a welcoming landmark on campus that can accommodate growth in the faculty, staff and graduate student population in the Department of Africana Studies. The project also significantly increases facilities for the historic Rites and Reason Theatre.
Center for Artistic Design and Production	Planning underway	To increase the visibility and quality of arts programming and research, Brown will build a state-of-the-art shop to allow faculty and staff to make and design sets, costumes and props for their innovative shows.
Pembroke Hall	Evaluation to begin during the Andrews House renovation	During the renovation of Andrews House, the University will evaluate the space in Pembroke Hall with the goal of identifying how to allocate the space and any renovation needs.

## Life and Medical Sciences

The life and medical sciences include some of the most space-intensive research programs across the University:

- the five biology departments and affiliated research centers in the Division of Biology and Medicine;
- four departments and more than a dozen research centers and institutes in the School of Public Health; and
- the interdisciplinary Carney Institute for Brain Science and the Department of Cognitive, Linguistic and Psychological Sciences (CLPS).

The University has invested in targeted renovations and infrastructure for the life and medical sciences over the past decade, including a floor-by-floor renovation of the Biomedical Center at 171 Meeting Street, renovations of 164 Angell Street for the Carney Institute and the Metcalf Research Building for CLPS, and the extensive renovation of the Medical Education Building at 222 Richmond Street in the Jewelry District.

Despite these investments, the main research facilities for the life and medical sciences are currently at or near maximum capacity, and many need significant investments for renovation and deferred maintenance. These include, but are not limited to, the Biomedical Center, Grimshaw-Gudewicz, Sidney E. Frank Hall for Life Sciences, Laboratories for Molecular Medicine (70 Ship Street) and the School of Public Health (121 South Main Street). We are currently investigating the possibility of leasing flexible laboratory space in the Jewelry District to reduce immediate space constraints and are actively planning for relatively large construction and renovations, as outlined in Table 3.

**Table 3: Capital Projects for the Life and Medical Sciences Currently Under Consideration**

FACILITY/UNIT	STATUS	DESCRIPTION
Integrated Life Sciences Building (ILSB)	Planning for new construction in the Jewelry District	Planning has begun, including architect selection, for a large interdisciplinary facility adjacent to other Brown properties in the Jewelry District that would include a combination of wet and dry lab space plus an animal care facility and core facilities and would offer space for researchers from the Division of Biology and Medicine, the Carney Institute for Brain Science and the proposed Institute for Biology, Engineering and Medicine.
School of Public Health	Planning study underway	A planning study is underway to review options to meet the unique needs of the School of Public Health. The ideal solution would allow the consolidation of the school into one building or several adjacent buildings and accommodate the school's significant growth and anticipated future growth.
Carney Institute for Brain Science	Planning for new construction on College Hill	Space on College Hill can provide a dedicated home for the Carney Institute in close proximity to researchers in Neuroscience and other biological sciences departments. This would include significant wet lab space in addition to core facilities and shared equipment.
Biomedical Center and Grimshaw-Gudewicz	Awaiting plans for renovation following the ILSB construction	This aging complex has been the historical home for many of the biological sciences departments and once housed the Warren Alpert Medical School. Several areas of the complex are in dire need of renovation, including the 60-year-old vivarium and some of the research laboratories, but they likely cannot be renovated until space is available in the ILSB or elsewhere.

## Physical Sciences

Most of the six physical science departments and the School of Engineering are at or near capacity in their current space, despite relatively recent investments in:

- the construction of the Engineering Research Center and the extended home for the Division of Applied Math at 170 Hope Street; and
- the renovations of the Barus Building for the Center for Theoretical Physics and the Geo-Chem Building for the Department of Chemistry and the Department of Earth, Environmental and Planetary Sciences.

Many of the lab spaces in the physical sciences need renovation and upgrade, and certain buildings — most notably Barus and Holley and the Center for Information Technology — need comprehensive plans for renovation and reconfiguration (Table 5). The School of Engineering and some of the physical science departments will benefit from the new ILSB that is planned for the Jewelry District as there will be space for the new Institute for Biology, Engineering and Medicine in the building, but there are still additional needs for space on College Hill.

**Table 5: Capital Projects for the Physical Sciences Currently Under Consideration**

FACILITY/UNIT	STATUS	DESCRIPTION
Lincoln Field Building (DEEPS)	Renovation recently completed	Until recently, the Department of Earth, Environmental and Planetary Sciences (DEEPS) was housed across three buildings on campus. This renovation addresses much-needed building renewal, accommodates additional growth in the department and ensures faculty members have access to adequate equipment and computational labs.
Physical sciences departments	Space study to be started soon	The School of Engineering and most of the physical science departments are near the limits of their existing research spaces on campus. This study will evaluate the state and usage of existing facilities and identify potential options for renovation and/or construction of new facilities to address needs across the departments.
Barus and Holley	Infrastructure renovations underway	The University has been investing in necessary maintenance and upgrades for Barus and Holley over the past few years and has several additional projects on the horizon. The ultimate plan for the space will be determined by the aforementioned space study for the physical sciences and School of Engineering.
Department of Computer Science	Space study underway	The Department of Computer Science is near capacity in the 35-year-old Thomas J. Watson Sr. Center for Information Technology (CIT) due to growth in the number of faculty and graduate students over the years. The ultimate plan for the department will be determined by a space study, with a goal of identifying potential means of accommodating additional offices and research space in the CIT or elsewhere on campus.

## Social Sciences

The eight social science departments and nearly 20 interdisciplinary institutes, centers and programs are spread across campus in dozens of buildings and houses. The University has invested heavily in research spaces for several social science units over the past decade, with additional capital needs under consideration (Table 4). Recent renovations or constructions include:

- 94 Waterman Street for the Center for the Study of Slavery and Justice;
- 96 Waterman Street for the Center for the Study of Race and Ethnicity in America;
- the Nicholson House to support the unification of the Department of American Studies, which previously was spread across several locations;
- Sharpe House for the Department of History;
- Stephen Robert '62 Hall for the Watson Institute for International and Public Affairs; and
- 164 Angell Street for the Department of Education and the Annenberg Institute for School Reform.

Many social science units have sufficient space for the size of their current research programs, though some of the existing buildings need renovation and two areas have maxed out their current space:

The Department of Economics is spread across five buildings — Robinson Hall (50% of faculty), 70 Waterman Street (25% faculty), 8 Fones Alley (20% of faculty), Mencoff Hall (5% faculty) and Blistein House (all graduate students). This sprawl has made it increasingly difficult to maintain department interactions and community.

The Department of Education and the Annenberg Institute for School Reform are pushing the limits of their space in 164 Angell Street and recently converted several public meeting spaces to offices to accommodate new faculty and staff.

**Table 4: Capital Projects for the Social Sciences Currently Under Consideration**

FACILITY/UNIT	STATUS	DESCRIPTION
Department of Economics	Beginning a space study	Economics is currently spread across Robinson Hall and four nearby buildings, which makes it difficult to maintain a strong sense of community. A study is underway to determine if a new facility near the Watson Institute would be possible.
Annenberg Institute and Department of Education	Beginning a space study	Both Annenberg and Education have maxed out their current spaces in 164 Angell Street. A study is underway to examine potential options to move the two units together elsewhere on campus, possibly into space freed by other moves.
Haffenreffer Museum Collections Research Center	Space study underway	The Haffenreffer Museum needs to move from its current complex in Bristol, R.I., to protect and preserve the collection. A study is underway to identify a suitable location, prioritizing stewardship of the collection and access for researchers.

## INVESTING IN ADMINISTRATIVE AND SUPPORT SERVICES

---

In addition to expanded and improved research space and additional people engaged in research, the University will need to increase and improve research support services and resources across campus. Such support includes but is not limited to:

- **Library Resources.** Providing appropriate staffing, databases, journals, collections and technology is a foundational element of the research enterprise, and it is essential that the University Library keep pace with Brown's growth in research excellence.
- **Special Collections.** Investing in Brown's distinctive special collections to support our research enterprise will ensure the University is a destination for certain areas of academic distinction.
- **Internal Research Funding.** Seed funding and small grants to allow researchers — faculty, postdocs and graduate students — to pursue professional development opportunities and initiate early-stage projects.
- **Research Administration.** Upgrade and streamline research administration processes across the University through a combination of policy changes, process improvements, investments in people and systems and collaborations with our affiliated health systems.
- **Administrative Systems and Processes.** Investments in upgrading administrative systems and improving processes that impact the research enterprise, such as hiring and purchasing, will be necessary to reduce the burden on researchers across the University.
- **Computing Infrastructure.** The future of research across all disciplines will require, at least in part, significant computational capabilities and expert technical staff to support quantitative analysis of large datasets.
- **Service Centers and Cores.** Additional specialized equipment, services and resources for research will be needed across the disciplines, such as new research core facilities in the sciences — including MRI and PET machines — and common specialized services such as survey development and statistical analysis.
- **Faculty Development Programs.** Training and development programs help faculty learn how to prioritize the demands on their time, develop and submit successful grant applications, manage teams and laboratories and keep up their technical skills.

These investments will be scaled over the next five to seven years and will be based on the principles outlined previously. It will be critical to ensure investments are targeted and coupled with close evaluations of our existing processes, policies, structures and systems. Our goal is to make research and scholarship at Brown easier and more seamless — and while we know that the University will need to increase headcount and funding in certain support areas, we also know that we can achieve some efficiencies and improvements in the current state through changes in our current policies and systems.

### Library Resources

World-class research universities depend upon world-class research libraries.

Over the past decade, the Brown University Library has strengthened its support for the University's growing research profile. The library has expanded the number of staff and span of expertise to furnish the kinds of specialized information services and other forms of support that researchers require to do first-rate work. Librarians' specialized services and time are increasingly written into external funding proposals, particularly with respect to impact evaluation and data management. Roughly half of the library's collection budget is dedicated to the acquisition of journal databases, datasets and other resources to support STEM, and the demand for these fundamental tools of research continues to grow. The shift to more data-driven social sciences research at Brown is driving demand for expert services and new scholarly resources for these fields. The library has also developed specialized expertise in digital humanities.

Continued investments and growth in the scale of Brown's research enterprise will require an increase in the library's capacity to deliver expert services, scholarly resources, information technology and facilities. Investments in three core resource areas are needed to support our ambitious goals:

- **Research Support Expertise.** We must add staff expertise in certain areas of research support services and specific high-need disciplines.
- **Scholarly Information Resources.** We must expand access to the scholarly literature and other information tools necessary for achieving academic excellence.
- **Research Access Systems.** We must invest in additional or upgraded technology systems, such as the Brown Digital Repository and VIVO, to improve access to scholarly materials and information sharing.

## Special Collections

World-class research libraries are magnets for researchers from around the globe, particularly when their scholarship draws upon rare and unique materials that the libraries have expertly collected, preserved and curated over time. Today's technology magnifies the impact of such distinguished collections, allowing them to be virtual as well as physical destinations. The John Hay Library has taken significant strides in the past few years toward the goal of becoming the kind of best-in-class "destination" center for special collections scholarship that is integral to research excellence at peer universities.

The Hay's new [Collection Policy](#) defines high-impact areas of scholarship across the arts, humanities and social sciences where its rare and unique materials constitute a national or international-level research resource.

As the University invests in research, we must continue to invest in our Special Collections in ways that complement our distinctive academic programs, ensure that our research materials are fully inclusive of previously neglected or marginalized histories and experiences, and ensure that the John Hay Library is a highly visible and accessible destination for scholars from around the world.

## Internal Funding

The University commits millions of dollars every year to support research. There are a number of funding programs offered to current faculty to support early-stage research projects, professional development related to research, and grant proposals. Growing research at Brown will require investments in several key areas:

- **Startup Funds.** Startup funds are offered to faculty when they begin their appointments at Brown to support them in launching their research programs. In general, the University offers very competitive startup packages to ensure we can recruit top faculty.
- **Competitive Grants and Awards.** There are dozens of competitive grant and award programs across the University to support early-stage research projects or high-impact research that may not be easily funded through external sources. These include the Seed Awards, Salomon Awards, Zimmerman Innovation Awards in Brain Science and Humanities Research Funds. Previous analysis indicates that seed funding has a very high return on investment, in the form of new external research awards.
- **Cost Share Funding.** Some sponsor organizations require that the home institution provide a portion of the funding required for certain research projects, and in some cases the competitiveness of a proposal depends on institutional support. Cost share is normally funded through various University sources.

These different sources of research funding are either offered centrally — through the Office of the Provost, the Office of the Vice President for Research or the Dean of the Faculty — or locally through separate pools in the schools, departments, institutes and centers. The local funding pools are either University funds that have been allocated to those units or endowments and gifts that are earmarked for specific research purposes.

As part of this Operational Plan, the University will double the amount of internal funding for competitive grants and cost-sharing programs across all disciplines to support research growth and ensure that these additional funds are distributed fairly among academic units at the University. Additionally, the University will evaluate the policies for research funds to broaden access to internal funds, ensure more equitable treatment of faculty outside of the tenure-track, ensure the levels of funding are adequate to support individual faculty research activities, and streamline the allocation process for certain funds to reduce administrative effort.

## Research Administration

Growing our research enterprise will require additional investments in research administration across the University, including in the following areas:

- **Research Strategy and Development:** Stewardship and support for University research initiatives, large multidisciplinary research teams, early career faculty, complex grant proposals, prestigious awards and internal research funding programs
- **Pre-Award:** The development, review and submission of grant proposals, followed by the negotiation and acceptance of award agreements

- **Post-Award:** The management of grant funding, including ensuring compliance, managing subawards, reporting and closing out completed awards
- **Research Integrity:** A wide array of groups and functions, including the Institutional Review Board, Institutional Animal Care and Use Committee, Conflict of Interest Review Board, Stem Cell Use Committee and Institutional Biosafety Committee
- **Research Contracting:** The procurement of goods or services to support research activities in compliance with University and sponsor policies
- **Technology Innovation:** The management of the University's patent portfolio and commercialization strategy

Most of these processes are currently distributed across a number administrative and academic units. Many Brown researchers have expressed concerns about the efficiency and effectiveness of these processes. The University has commissioned an external review of our broader research administration functions in order to improve these functions and scale them over the coming five to seven years. This review will cover all academic and administrative units involved in research administration and will focus on evaluating organizational structures, staffing levels, systems, policies, practices and processes.

The initial findings from the external review have highlighted several significant investments to improve our research administration processes over the coming years, including:

- **System Upgrades.** Many of our research administration systems require burdensome manual processes and duplicate data entry. Brown is already in the process of upgrading many of these systems and will be investing further funds and effort to ensure these upgrades are successfully implemented as quickly as possible.
- **Staffing.** Some of our research administration teams are adequately staffed but plagued by manual and inefficient processes. Other teams are simply short staffed considering their current workloads. Brown will invest in additional research administration staff over the coming years for central administrative units such as the Office of the Vice President for Research and individual academic units based on these findings.
- **Standards and Training.** Staff and faculty highlighted the need for a standard set of operating procedures and associated training on research administration processes to ensure consistency across the institution, limit frustration among end users and reduce onboarding time. The University will invest in developing appropriate documentation and training programs to benefit staff and faculty across the institution.
- **Direct Faculty Support.** The review has highlighted a high need for additional direct support for faculty in developing grant proposals (especially large, interdisciplinary proposals), completing administrative procedures and developing submissions for the Institutional Review Board. Greater front-end support for faculty through dedicated support staff should help streamline the back-end processes and increase the success rate of these processes.

### Administrative Systems And Processes

In addition to evaluating the systems and processes related to research administration, the University must upgrade and improve many administrative systems processes that impact research activities. For example, the external review of research administration identified several pain points from faculty and staff such as:

- purchasing and submitting expenses for reimbursement;
- recruiting and hiring staff and postdocs; and
- developing and processing purchasing contracts and legal agreements.

The University will make significant investments over the coming years to streamline our administrative processes to make it easier for faculty to conduct research and staff to support the research enterprise. As noted in the Investing in Our People section, these investments will include the development of formal procedures and training programs. Additionally, the University will invest significantly in systems upgrades including major enterprise systems such as Workday, population-specific systems such as the Graduate School Information System and functionally specific systems such as the laboratory inspection software used by Environmental Health and Safety.

## Computing Infrastructure

Research in all disciplines increasingly requires access to strong computational capabilities, and some of the highest needs commonly expressed by researchers across the University are for high-performance computing infrastructure that can be used to analyze large datasets and support for and training on methods of computational and data analysis.

Common databases and computing infrastructure often require significant time and investment to build well, and the University runs a risk of overlapping and duplicating resources without central support. The University is also seeing a high demand for trained data scientists from a number of disciplines but is facing an increasingly competitive job market for such specialized personnel.

The University will continue to invest in computing support across disciplines through administrative support units and interdisciplinary academic units, including:

- **Center for Computation and Visualization.** The center supports faculty through a team of staff data scientists and by hosting specialized hardware and complex software programs such as artificial intelligence and machine learning libraries. The center will require significant investments to remain on the cutting edge of technology and to recruit and retain support staff.
- **Office of Information Technology (OIT).** OIT currently maintains the University's high-performance computing infrastructure and will require a significant investment to upgrade the power and cooling systems, expand the central storage capacity and replace the campus datacenter. These investments will be required to continue meeting the University's existing research needs, and will need to be scaled with additional growth.
- **Data Science Initiative.** The Data Science Initiative is developing a community of computational and data scientists across the University, including staff, faculty and students, to provide continuing training and education, build capacity across academic units and help retain critical data science specialists.

## Service Centers And Cores

Service centers, such as research core facilities, are shared resources that provide broad access to research instruments, equipment, technologies and services to researchers across the University. Staff affiliated with these service centers often have advanced scientific or technical training and provide expert consultative services. As shared resources, service centers provide widespread benefits for the research enterprise by providing researchers with access to equipment and technologies that they could not support individually in their own academic units or laboratories.

Service centers are funded by charging for goods or services provided to users within the University and external to the University. All service centers are expected to recover no more than the aggregate annual costs of their operations through charges to users, and many require a subsidy from the University to help cover the costs of maintenance of the cores, procurement of additional equipment or staff support.

Service centers are extremely beneficial for building research programs, increasing competitiveness for external grant funding, facilitating interdisciplinary collaboration and recruiting new faculty members, postdocs and students.

### RESEARCH CORE FACILITIES

Research core facilities often revolve around expensive scientific equipment and specialized technical staff. Cores must comply with federal regulations and/or policies from funding sponsors, including annual reviews and audits. The Office of the Vice President for Research, the Controller's Office and the Division of Biology and Medicine support many of the cores across the University, but other service centers are managed by individual schools, departments, institutes and centers.

Developing and maintaining core facilities in particular is expensive. In the last few years, the University has invested increasing levels of funding in core facilities. The current list of cores includes:

- **Cores Supporting the Life and Medical Sciences:** Bioimaging, Flow Cytometry, Genomics and DNA Sequencing, Magnetic Resonance Imaging (MRI), Media Prep, Molecular Pathology, Mouse Behavioral Phenotyping, Mouse Transgenics and Gene Targeting, Proteomics, BioBank, Structural Biology, and XROMM
- **Cores Supporting Engineering and the Physical Sciences:** Mass Spectrometry, Environmental Chemistry Analysis, Electron Microprobe and Microscopy, High Pressure Liquid Chromatography, Nuclear Magnetic Resonance, Nano Tools, Nanofabrication, Instrument Shop, and Fluid Mechanics



There is a need for a more systematic, ongoing structure for funding, developing, maintaining and overseeing research core facilities across the University to ensure that Brown:

- realizes the maximum benefit from these valuable and expensive resources;
- leverages these common resources to meet our goal of growing the research enterprise; and
- limits the duplication of expensive services and resources across academic units.

Over the next five to seven years, the University will increase its subsidy to support central core facilities and infrastructure and will conduct an analysis to determine appropriate levels of ongoing support given our growth ambitions and plans to further expand the number of cores. We will also adjust our policies to ensure resource allocations are made with the highest return on investment and alignment with institutional research priorities.

#### **OTHER SERVICE CENTERS**

Academic units across the University have established and are currently developing new service centers focused on expert technical and consultative services. Many of Brown's peer institutions maintain similar service centers, covering such functions as statistical analysis; survey development, distribution and analysis; and program evaluation and assessment.

While they do not have the same level of regulation and central oversight as cores, these service centers can still provide broad benefits across the research enterprise. The University will identify high-demand research services across disciplines and build out central capabilities over the next five to seven years.

## INVESTING IN SIGNATURE RESEARCH INITIATIVES

To maximize the investments in our research enterprise, Brown must continue to grow in ways that build on existing areas of distinction, align with the University’s culture and ethos and support broader societal priorities. The University is inviting faculty, staff and students from across disciplines to submit proposals for Signature Research Initiatives that have the potential to become innovative, world-class research programs.

### FRAMING FOR SIGNATURE RESEARCH INITIATIVES

Signature Research Initiatives should build opportunities for faculty, staff and students to perform innovative research and meet the following criteria:

- **Build on Distinctive Strengths.** Initiatives must build on Brown’s academic strengths and have the potential to become top research programs — both at Brown and across the world — with targeted investments and resources.
- **Illustrate Interdisciplinary Breadth.** Initiatives must engage multiple disciplines and have the potential to benefit several academic units, including faculty and students not directly affiliated with the initiatives.
- **Demonstrate Potential to Garner External Support.** Initiatives must have the potential to attract external grants and philanthropic donations, aligning with known funding priorities from federal agencies, private foundations, corporations and donors.
- **Align with Integrative Themes.** Initiatives must align with one or more of the integrative themes from *Building on Distinction*, as illustrated in Figure 17.

Signature Research Initiatives should be led by existing academic units such as departments, institutes and centers unless there is a compelling strategic or scholarly reason why a new academic unit is required.

Figure 17: Nine Integrative Themes from Building on Distinction

• Cultivating Creative Expression	• Creating Peaceful, Just and Prosperous Societies	• Advancing Computational and Data Sciences
• Understanding the Human Brain	• Exploring Human Experience	• Deciphering Disease
• Sustaining Life on Earth	• Using Science and Technology to Improve Lives	• Improving Population Health

### SUPPORT FOR SIGNATURE RESEARCH INITIATIVES

The University will support these Signature Research Initiatives based on their needs through a variety of means, including:

- administrative support to launch the initiatives;
- limited-term seed funding to cover costs for faculty, staff and students working on the initiatives and related expenses such as goods, services, travel and events;
- support for publicizing or marketing the initiatives with academic or public audiences;
- dedicated space on campus to facilitate research; and
- inclusion in the extension to the University’s *BrownTogether* fundraising campaign or subsequent fundraising efforts.

### PROCESS FOR SUBMITTING PROPOSALS

Interested faculty members should work together and with their respective Deans to prepare a brief proposal using a provided template. The Deans will determine whether to advance the proposal to the Senior Deans and the Provost for discussion. The Provost will have approval authority for Signature Research Initiatives and will determine the level of resources and support. Any Signature Research Initiatives that require new academic units or changes to existing units will need to follow the University’s established processes as well, which may include review by the Academic Priorities Committee, Faculty Executive Committee, the broader faculty body, the Corporation of Brown University and/or individual advisory board(s).

The Office of the Provost will be communicating the detailed steps for submitting proposals. Faculty are invited to begin working with their respective Deans on proposals when they are ready. Proposals will be reviewed on an ad hoc basis over the coming years.

**INITIAL LIST OF PROPOSALS**

An initial draft of this Operational Plan shared with the Brown community included 10 examples of Signature Research Initiatives that illustrated the kind of world-class research programs that can help propel Brown to the next level of excellence and distinctiveness. These examples were not meant to be the final or exhaustive list of all Signature Research Initiatives in which the University will invest over the coming five to seven years.

Over the summer and fall of 2022, University leaders received several additional proposals from the community among the feedback on the draft Operational Plan.

Table 6 illustrates the current (as of the date of release of this plan) combined lists of proposed Signature Research Initiatives that will be reviewed by the Provost and the Senior Deans over the coming year. New proposals will be reviewed on a rolling basis, and the University will announce new Signature Research Initiatives as they are approved.

**Table 6: List of Known Signature Research Initiatives**

<b>INITIAL LIST OF PROPOSALS</b> From the draft Operational Plan circulated in June 2022	<b>PROPOSALS FROM THE COMMUNITY</b> Identified by faculty during the summer and fall of 2022
<ul style="list-style-type: none"> <li>• Creating Collaborative Humanities Laboratories</li> <li>• Reviving the Arts Ecosystem Through Innovation</li> <li>• Combating Inequality</li> <li>• Preparing for and Responding to Pandemics</li> <li>• Detecting and Treating Alzheimer’s Disease</li> <li>• Treating and Curing Cancer</li> <li>• Sequencing and Understanding RNA</li> <li>• Innovating Through Biomedical Engineering</li> <li>• Promoting Sustainable Energy</li> <li>• Promoting Ethical and Socially Responsible Data Science</li> </ul>	<ul style="list-style-type: none"> <li>• Deepening and Diversifying the Global Cultural Commons</li> <li>• Maintaining and Renewing the Critical Tradition</li> <li>• Advancing Methods of Digital Scholarship</li> <li>• Understanding and Addressing Systemic Racism</li> <li>• Solving for Equitable Climate Futures</li> <li>• Tracking, Disseminating and Improving Climate Information</li> <li>• Exploring and Engineering Quantum Materials and Technologies</li> <li>• Developing Novel Methods/Applications for Machine Learning and Artificial Intelligence</li> <li>• Preventing and Treating Opioid Use Disorder</li> </ul>

A list of all proposals received or in development will be maintained on the Office of the Provost website.

## CONCLUSION

---

Brown University has grown in significant ways since the launch of *Building on Distinction* in 2014 in terms of faculty and graduate students, in terms of scholarly work, in terms of research funding and in terms of the diversity of our campus.

This Operational Plan represents the next phase of the University's ambitious strategic plan. Brown will grow and make significant investments in research over the next five to seven years. Much of this growth will be organic, by:

- ensuring that our existing faculty, staff and students have additional support, space and resources to further their research programs; and
- hiring and enrolling additional scholars in a range of disciplines that align with the University's research and academic priorities.

Some of the growth will also be through partnerships and investment in cutting-edge Signature Research Initiatives that align with the University's historic strengths.

Reaching Brown's research aspirations will be an important effort of a great many individuals, academic units and offices across the Brown community. It will be an inclusive and collaborative process, and all of the investment and growth will be distinctively Brown.

### Background

Since *Building on Distinction* was approved by the Corporation of Brown University in 2013 and launched in 2014, University leadership has taken concrete steps to advance its core commitments through a series of action-oriented plans.

- In 2015, Provost Richard M. Locke worked closely with academic and administrative stakeholders across campus to lead the development of the *Operational Plan for Building Brown's Excellence*, which translated the strategic plan's inspiring goals into concrete actions designed to enable the University to fulfill its mission and consolidate its role as a leader in higher education and research.
- The following year, after a community-wide process, the University launched *Pathways to Diversity and Inclusion: An Action Plan for Brown University* (commonly known as the DIAP) as a companion to the strategic plan, outlining steps for Brown to become a fully diverse and inclusive community.
- During summer 2018, Provost Locke worked with academic and administrative colleagues to review, reconsider and refine the original *Operational Plan*, which resulted in the *Revised Operational Plan for Building Brown's Excellence*.

### SPRING 2022 PLANNING PROCESS

In line with these operational plans and the University's ongoing long-term planning processes, Provost Locke convened a retreat in January 2022 with all of the Senior Academic Deans to discuss the University's aspirations and goals for research in the years ahead. At the end of that retreat, the Senior Academic Deans unanimously endorsed the goal of investing in Brown's research enterprise over the next five to seven years to continue the University's progress on the commitments identified in *Building on Distinction*.

First and foremost, the Deans acknowledged that research is critical to our institution and that it is complementary to our educational mission. The Deans also acknowledged that to remain true to Brown's institutional identity and culture, growth should emphasize areas where there are existing strengths and have a high potential for impact on society. By framing the goal broadly (and not relying solely on one convenient metric), the Deans further acknowledged that to do justice to the breadth of scholarship at Brown, investments should also be made in areas of research that are not as easily measured but equally reflect values, strengths and potential impact.

Over winter and spring 2022, the Senior Academic Deans met regularly to discuss proposals for growing research and identifying potential impediments or barriers to growth. Provost Locke presented the goal and overall plan to President Christina H. Paxson and several groups including:

- the Academic Priorities Committee, a body of elected faculty and academic leaders;
- chairs of academic departments and directors of major academic institutes and centers;
- the faculty;
- administrative leadership and staff from across the University; and
- the Committee on Academic Affairs of the Corporation of Brown University.

In June 2022, President Paxson distributed a draft version of the *Operational Plan for Investing in Research* to the Brown community to solicit additional feedback and recommendations.

### Engagement and Feedback

After President Paxson released the draft plan, University leadership scheduled a series of meetings and forums with faculty and staff early in the Fall 2022 semester to solicit and hear feedback on the draft Operational Plan, in addition to several other engagement measures. Over the course of four months, hundreds of faculty and staff provided input and feedback on the draft plan, including via:

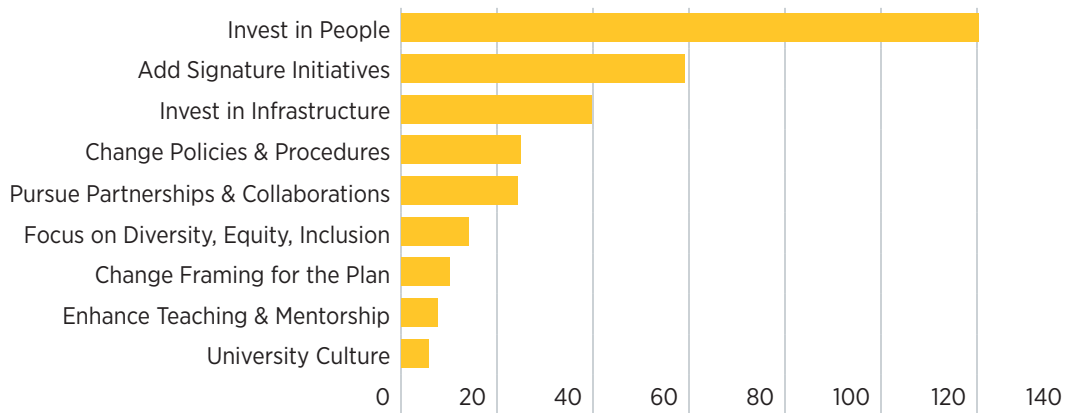
- **Online Survey:** 140 individuals and academic units offered detailed comments on the Operational Plan over the course of two months
- **Faculty Commons:** 160 faculty attended a virtual Faculty Commons, offering comments and questions on the Operational Plan

- **Two Staff Forums:** Over 180 staff attended these sessions, offering comments and questions on the Operational Plan
- **Faculty Focus Groups:** The external review of research administration engaged with more than 80 faculty members nominated by Deans and the Vice President for Research in a series of focus groups.

A major takeaway from all of these feedback mechanisms is that faculty and staff are generally very excited about and supportive of the *Operational Plan for Investing in Research*. While many individuals and academic units provided constructive feedback and suggestions on how to improve the Operational Plan, these comments were often coupled with positive expressions of support for proceeding.

Most of the comments and feedback fell into nine major themes, which are outlined in Figure 18. University leadership reviewed all of these comments and feedback carefully and made substantial changes to the draft Operational Plan in response. The subsequent sections summarize the suggestions and comments in the top five themes.

**Figure 18: Nine Themes from the Online Survey Feedback on the Operational Plan**



#### **THEME #1: INVEST IN PEOPLE**

By far, most of the comments from faculty and staff focused on increasing the number of people at Brown supporting the research enterprise and updating our compensation, training and policies to better support employees at Brown. Some of the most prevalent suggestions on how Brown should invest in its people were to:

- increase the number of administrative staff and better support/compensate them;
- change the sabbatical policy for tenure-track faculty to offer higher compensation;
- increase financial support for research faculty and postdocs;
- increase the number of doctoral students and enhance fellowship opportunities for doctoral students; and
- reduce the administrative duties for faculty.

University leadership was committed to incorporating most of these suggestions into the current revised *Operational Plan for Investing in Research* — for example, the sabbatical policy change was approved in October 2022, and the University is initiating a work group focused on research faculty, research staff and postdocs. Similarly, University leaders are evaluating the number of administrative staff members and doctoral students across campus and future needs.

#### **THEME #2: ADD SIGNATURE INITIATIVES**

Many comments focused on signature initiatives highlighted the low number of humanities proposals included in the draft *Operational Plan for Investing in Research* and expressed a desire for greater representation of the humanities in future signature initiatives. One academic unit offered two suggested proposals on behalf of several humanities departments, which were included in the revised Operational Plan. Other comments on the signature initiatives focused on recommending initiatives focused on research in the arts, climate change and population studies to name a few.

As a result of this and other feedback, University leadership decided to focus the revised *Operational Plan for Investing in Research* on the process for submitting proposals for Signature Research Initiatives over the coming five to seven years. This process is intended to be open and transparent to allow faculty to propose Signature Research Initiatives with the support of their respective Deans and leaders of their academic units.

### **THEME #3: INVEST IN INFRASTRUCTURE**

Many faculty and staff expressed a desire for greater University investments in core infrastructure related to research, including:

- space and facilities for research, including laboratories;
- research equipment and technology; and
- administrative systems, particularly Workday and the systems related to research administration.

The revised *Operational Plan for Investing in Research* seeks to highlight the very significant investments that the University will make in these three areas, particularly in the Investing in Our Space section and several subsections under Investing in Administrative and Support Services.

### **THEME #4: CHANGE POLICIES AND PROCEDURES**

Several members of the community offered suggestions and comments around the University's administrative policies and procedures. In particular, many faculty and staff cited inefficiencies and cumbersome processes related to research administration, purchasing and hiring. Several faculty members also cited concerns around the processes for the Institutional Review Board and Institutional Animal Care and Use Committee, particularly focusing on the composition of the review board — with limited representation from the social sciences — and the systems for animal care.

University leadership is acutely aware of these concerns, many of which precipitated the external review of research administration and related processes. Members of Brown's leadership anticipate that the external review will recommend a series of projects to streamline processes, upgrade systems and develop standard operating procedures and training.

### **THEME #5: PURSUE PARTNERSHIPS AND COLLABORATIONS**

There were several comments recommending that the University incentivize and promote collaborations across departments, specifically in the humanities; support community-engaged research across disciplines; and pursue greater integration and partnership with our affiliated health systems, such as Lifespan and Care New England.

The University is pursuing all of these suggestions. Several commitments to support community-engaged research were added throughout the Operational Plan based on the feedback from faculty and staff. Several University leaders are also actively engaged in discussions to integrate the research enterprises at our affiliated health systems. Finally, recommendations for collaboration are encouraged through the proposal process for Signature Research Initiatives.