AFTER A YEAR OF LISTENING AND LEARNING, I AM EXCITED ABOUT THE POSSIBILITIES THAT LIE AHEAD AND FOR ALL THE NEW WAYS HARVARD IS ANSWERING THE CALL TO LEAD, BOTH TO MAKE THE WORLD BETTER AND TO MAKE OUR UNPARALLELED INSTITUTION STRONGER, MORE INCLUSIVE, AND MORE DEEPLY ENGAGED WITH THE WORLD’S MOST URGENT PROBLEMS.

CLAUDINE GAY
Dear Colleagues,

It is my pleasure to present the Dean’s Annual Report on the activities of the Faculty of Arts and Sciences (FAS) during the Academic Year 2019 (July 2018 through June 2019).

My first year as the Edgerley Family Dean of the FAS was a year of discovery. In labs and studios, classrooms and dining halls, in the bleachers and the darkened seats of the theater, I had the great privilege of seeing the dreams and aspirations of this ambitious academic community in action. I have been invigorated by the boundless energy of our students, inspired by the imaginative vision of our faculty, impressed by the exceptional skills and dedication of our staff, and encouraged by the generosity and partnership of our alumni. But perhaps what has resonated with me most is our community’s impatience for the future and the deep sense that there are important challenges Harvard must rise to meet. I share that impatience. After a year of listening and learning, I am excited about the possibilities that lie ahead and for all the new ways Harvard is answering the call to lead, both to make the world better and to make our unparalleled institution stronger, more inclusive, and more deeply engaged with the world’s most urgent problems.

Intellectual ambition demands new perspectives, new ideas, and new conversations. The pioneering Embedded EthiCS program (page 5) is an example of a faculty initiative delivering exactly that. Through an innovative partnership between faculty in our Philosophy and Computer Science (CS) departments, Harvard is leading important conversations about the ethical dimensions of technology. With this new pedagogical approach, ethical reasoning modules are being integrated directly into the CS curriculum. Students are wrestling with and reflecting on the social and moral implications of the technology they are creating, coming to view these implications not as problems for others to solve after the fact, but as an integral part of the design challenge to which they should apply themselves. Ethical reasoning skills are essential for today’s computer scientists, and Embedded EthiCS is a one-of-a-kind program in the nation that is quickly emerging as the standard bearer for exploring the intersection of ethics and technology and for training the next generation of technologists.

Across the many conversations I have had this past year, I have been continually reminded that organizations that remain at the cutting edge over time are those that continually renew themselves. Our capacity to grow and change as an institution, to test big ideas, to ask ambitious questions, and to pursue pioneering lines of inquiry starts with our world-class faculty. As a scholarly community committed to transformative
discovery, we are eager to bring forward diverse voices and fresh viewpoints to enhance the intellectual depth and disciplinary breadth of our teaching and research. In the “Faculty Trends” (page 10) section of this report, we see that the FAS continues to pay close attention to our recruitment practices to ensure that we are selecting outstanding faculty from the broadest possible talent pools. And for the seventh year in a row, representation of women and minorities in our ladder faculty has increased. But just as important as having a diverse and dynamic community is building a vibrant work environment grounded in trust and mutual respect, where opportunities for collaborative exchange can flourish. In pursuit of this goal of inclusive excellence, the FAS is expanding its professional development resources for faculty by providing new workshop opportunities for both our tenured and tenure-track colleagues to strengthen their skills as researchers, teachers, and university citizens.

The “Financial Letter” (page 17) summarizes our financial progress in support of our academic mission. For the second year in a row, the FAS achieved budgetary balance in the modified Generally Accepted Accounting Principles view used by the University, a testament to discipline and strong partnership across our many units. While this is welcome news and a significant indicator of budgetary health and stability, we must remain principled in our budgetary processes and priority setting as we plan for the future. Prioritizing investments in the scholarly enterprise, innovative teaching, and the student experience are imperative to advancing the frontiers of knowledge and preparing our students for lives of leadership and service to the world. For example, meaningful investments were made this year to support the newly redesigned GenEd program, which launched this Fall with 160 courses that bring a creative and interdisciplinary approach to engaging our students as they grapple with complex current issues and answer humanity’s enduring questions. We have also dedicated resources to open up new possibilities in the study of ethnicity, indigeneity, and migration, to advance faculty research efforts, and to continue building a dynamic, 21st-century curriculum that provides our students a valuable lens for understanding contemporary American society.

As we look to the coming year, I am excited to think of all that lies ahead for this ambitious academic community—questions to be asked, insights to be drawn, new directions to be pursued, and transformative moments of connection that will expand what is possible. Together, we are putting new discovery within reach. I look forward to working alongside each of you to continue our shared pursuit of knowledge that improves the world and to strengthen the vibrant community that makes this extraordinary pursuit possible.

Sincerely yours,

Claudine Gay
Edgerley Family Dean of the Faculty of Arts and Sciences
Wilbur A. Cowett Professor of Government and of African and African American Studies
Integrating computer scientists and philosophers, the pioneering Embedded EthiCS program grows.
Facial recognition technology, for example, may speed up security lines, but it can also do potential harm to women and people of color, whom it has a harder time identifying, with disastrous false positives. Today’s technologists must learn to develop systems that are both beneficial and socially responsible. The Embedded EthiCS program is a collaborative undertaking by the computer science and philosophy faculties at Harvard to address these concerns by teaching students to consider not merely what technologies they could create, but also whether they should create them.

In contrast to standalone courses in ethics that are a component of many science and engineering curricula, the Embedded EthiCS model teaches students about the importance of moral and social responsibility in computer science (CS) by weaving ethical reasoning into multiple courses across the CS curriculum. This multilayered approach reinforces the importance of asking questions about and considering the implications of technological design and development at every stage of the process.

Working closely with faculty course heads in computer science, PhD students in philosophy design and teach short modules, create in-class activities, and grade assignments that help CS students engage with a variety of ethical questions alongside their technical education. Post-doctoral scholars in both departments work with the graduate students on their modules and coordinate the program with faculty leadership.
The prominent role of graduate students and post-doctoral fellows in the program is by design, said Higgins Professor of Natural Sciences Barbara J. Grosz. The program is “a win for CS students who learn ethics from people who have expertise in ethical reasoning—and a win for graduate students from philosophy who learn more about computing technology and gain career-useful experience in cross-disciplinary teaching.”

From its initial offerings in four CS courses in Spring 2017—including CS 001: Great Ideas in Computer Science and CS 179: Design of Useful and Usable Interactive Systems—Embedded EthiCS modules are now taught in more than 20 CS courses for both undergraduate and graduate students. Topics studied in the modules include discrimination in machine learning algorithms, the responsibility of software companies to monitor product use, and the transparency obligations of search engine companies.

“If you’re building a new kind of computing technology, you will encounter a wide range of challenges related to making something that really works out in the world. And, if you design without considering the ethical implications or societal impact of your design, your system is likely to raise ethical issues,” said Grosz. “The humanities teach a different set of skills and way of thinking that is an important complement to the technical and scientific thinking of computer science.”

Grosz co-founded the program with Samuel H. Wolcott Professor of Philosophy Alison Simmons. The faculty leadership team also includes Philosophy Lecturer Jeffrey Behrends, Gordon McKay Professor of Computer Science Stephen Chong, and Fred Kavli Professor of Computer Science Radhika Nagpal. Simmons and Behrends are program co-directors in philosophy, and Nagpal and Chong are co-directors in CS.
"The collaboration makes the teaching of ethical reasoning in CS both feasible and scalable," said Simmons. "The philosopher and computer scientist each bring her domain expertise to the table, and they work together to modify an existing course with ethics content."

Prior to joining the leadership team, Nagpal participated in the program while teaching undergraduate robotics classes. She had been interested in teaching concepts of responsible design to her students, but was hesitant to do so without having expertise in ethics.

Nagpal’s first experience with Embedded EthiCS was in Spring 2018, when she worked with Kate Vredenburgh, a PhD student in philosophy at the Graduate School of Arts and Sciences, to develop a module for CS 189: Autonomous Robot Systems. Nagpal wanted students to understand the pertinent issues of automation and job loss while they learned to build robots that could navigate difficult spaces and retrieve items.

"In my class, students work on robot applications that put robots in the same workspaces as people, so the ethical issues of trust, job loss, and safety all become quite apparent to the students," said Nagpal. "The Embedded EthiCS modules are so important because they allow us to tackle these issues in a meaningful way by bringing in the frameworks of ethical reasoning."

As more courses incorporate Embedded EthiCS teaching modules, the team and its ambitions have also grown. In the 2019–20 academic year, Embedded EthiCS will employ three graduate students each term, two post-doctoral fellows from the Department of Philosophy to teach modules, and two postdocs from CS in advisory roles.

“Our graduate students are developing intellectual and pedagogical skills that they will take to their jobs elsewhere, thus spreading the model,” said Simmons.
The program’s innovative approach to education has been recognized by industry heavyweights and peer institutions. In April, Grosz and the Embedded EthiCS team received a $150,000 grant as a winner of the Responsible Computer Science Challenge, a competition run by Mozilla, Omidyar Network, Schmidt Futures, and Craig Newmark Philanthropies. Other schools that received grants from the challenge have also adopted concepts seen in Embedded EthiCS: the use of modules in multiple courses, an incremental growth model for offering modules across courses, and working to habituate ethical thinking within CS courses.

To expand the reach of Embedded EthiCS, the leadership team is posting modules and training guides on an open-source website, and has fielded requests to bring modules to other courses and institutions on campus.

“Harvard is leading in undergraduate education about issues of ethics in computer science and the tech world through Embedded EthiCS, and has been ahead of the curve on issues of ethics through other programs like the Edmond J. Safra Center for Ethics,” said Nagpal.

The growth of Embedded EthiCS reflects the expansion of the CS program at Harvard and the increasing awareness of privacy, misinformation, and other issues that have come to define our relationship to technology.

“Students want to shape their technological future rather than be shaped by it,” said Simmons. “They’re living the realities that we talk about in class, so it’s not an intellectual exercise for them. We want to help them shape their future.”
faculty trends
Office for Faculty Affairs
Academic Year 2018–19
Faculty Trends

As of Fall 2019, the Faculty of Arts and Sciences (FAS) is composed of 1,221 total faculty (1,057 full-time equivalents [FTEs]). A breakdown of faculty counts by category is provided below.

Figure 1: Total Faculty Counts in the FAS, Fall 2019

<table>
<thead>
<tr>
<th>Faculty Category</th>
<th>Head Count</th>
<th>Full-Time Equivalent (FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenured Professor</td>
<td>563</td>
<td>536</td>
</tr>
<tr>
<td>Tenure-Track Professor</td>
<td>156</td>
<td>156</td>
</tr>
<tr>
<td>Professor in Residence</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Professor of the Practice</td>
<td>23</td>
<td>15.5</td>
</tr>
<tr>
<td>Senior Lecturer</td>
<td>41</td>
<td>32</td>
</tr>
<tr>
<td>Senior Preceptor</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Associate Senior Lecturer</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Lecturer</td>
<td>229</td>
<td>143.5</td>
</tr>
<tr>
<td>Preceptor</td>
<td>125</td>
<td>115</td>
</tr>
<tr>
<td>Visiting Faculty</td>
<td>51</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total Faculty</strong></td>
<td><strong>1,221</strong></td>
<td><strong>1,057</strong></td>
</tr>
</tbody>
</table>

Of the 1,221 faculty, 39% are women, and 24% are minorities. Faculty who identified as Black or African American, Hispanic or Latinx, Native American, or two or more races represent 10% of the faculty.

The FAS currently includes 724 ladder faculty,\(^2\) down from last year’s count of 734. The decrease in ladder faculty can be attributed to a lower-than-expected number of successfully completed searches and a higher-than-expected number of faculty departures (with men and women proportionally represented in the unexpected departures). There is a sizable cohort of 16 additional incoming faculty who have accepted offers and who will start their appointments in January 2020 or beyond.

\(^1\)“Tenured Professor” includes University Professor.

\(^2\) The ladder-faculty ranks include Convertible Instructor; Assistant Professor; Associate Professor; Tenured Professor; Professor in Residence; and University Professor.
The FAS continues to pay close attention to recruitment practices to ensure that we are selecting faculty from the broadest possible talent pools. The representation of women and minorities in our ladder faculty has increased for the seventh year in a row.

Currently, the ladder faculty is composed of 227 women (up from 225 last year) and 176 minorities (up from 171 last year). Women now represent 31% of the ladder faculty and 47% of the tenure-track faculty. Minorities represent 24% of the ladder faculty and 34% of the tenure-track faculty. Faculty who identified as Black or African American, Hispanic or Latinx, Native American, or two or more races represent 10% of the ladder faculty and 13% of the tenure-track faculty.
**Offers**

During academic year (AY) 2018–19, the FAS conducted 49 ladder-faculty searches, which resulted in 34 offers. Of the 34 offers, 18 were made to women (53%), and 16 were made to men (47%). A comparison of these outcomes with the previous two years is shown below.

The acceptance rate for minority candidates in AY 2018–19 was 67%, compared to an overall acceptance rate of 68% for all candidates. Over a three-year period, the acceptance rate for minority candidates was 76%, compared to an overall acceptance rate of 73% for all candidates.

The FAS will continue to work on building a strong faculty. We encourage faculty to continue to follow best practices at every stage of a search, as outlined in such documents as “Recommendations for Ensuring the Integrity of Faculty Searches.” In addition, Mahzarin R. Banaji, Richard Clarke Cabot Professor of Social Ethics and Senior Advisor to the Dean on Faculty Development, continues to offer expertise to departments and areas on implicit bias and ways to conduct rigorous, inclusive searches.

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**Figure 3: Ladder-Faculty Offers in the FAS, AY 2016–17 to AY 2018–19**

<table>
<thead>
<tr>
<th></th>
<th>2016–17</th>
<th>2017–18</th>
<th>2018–19</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offers to women</td>
<td>20 (50%)</td>
<td>21 (45%)</td>
<td>18 (53%)</td>
<td>59 (49%)</td>
</tr>
<tr>
<td>Offers to men</td>
<td>20</td>
<td>26</td>
<td>16</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>47</td>
<td>34</td>
<td>121</td>
</tr>
</tbody>
</table>

Our offers were racially and ethnically diverse, with 44% of offers in AY 2018–19 being made to minorities. Fifteen percent of those offers were made to Black or African American, Hispanic or Latinx, and Native American candidates.

The acceptance rate for AY 2018–19 offers was 68% (56% for women and 80% for men). These rates do not include three offers that are still pending, two of which were made to women. A comparison of acceptance rates over the last three years is shown below. Although the difference in acceptance rates between women and men in AY 2018–19 does not appear to be part of a pattern, we will continue to monitor this closely. Of the women who declined AY 2018–19 offers to date, the majority cited spousal considerations in their decision.

**Figure 4: Ladder-Faculty Offer Acceptance Rates in the FAS, AY 2016–17 to AY 2018–19**

<table>
<thead>
<tr>
<th></th>
<th>2016–17</th>
<th>2017–18</th>
<th>2018–19</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer acceptance rate: women</td>
<td>60%</td>
<td>85%</td>
<td>56%</td>
<td>68%</td>
</tr>
<tr>
<td>Offer acceptance rate: men</td>
<td>60%</td>
<td>88%</td>
<td>80%</td>
<td>77%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>60%</td>
<td>87%</td>
<td>68%</td>
<td>73%</td>
</tr>
</tbody>
</table>

The acceptance rate for minorities in AY 2018–19 was 77%, compared to an overall acceptance rate of 82% for all candidates. Over a three-year period, the acceptance rate for minority candidates was 76%, compared to an overall acceptance rate of 70% for all candidates.
Promotions
Eighteen tenure-track faculty were scheduled to be reviewed for promotion to tenure during AY 2018–19. Of those 18 cases, 16 reviews were completed, and two faculty chose not to stand for their review.

Of the 16 completed tenure reviews, 11 (69%) were successful. The success rate for women was 80%, and the success rate for men was 64%.

Professional Development Programming
As in past years, the FAS has viewed support for the professional development of our faculty as a critical part of maintaining a vibrant intellectual community. In AY 2018–19, the Office for Faculty Affairs (OFA) expanded its professional development programming. In addition to offering orientations, trainings, and other events similar to ones that we have offered before, we piloted two new programs that were well received and that we will offer again in the coming year.

At the start of AY 2018–19, OFA’s annual orientations for new faculty—the two-day “New Faculty Institute” for ladder and senior faculty and the all-day “Navigating Harvard” orientation for non-ladder faculty—engaged faculty on a range of topics related to teaching, advising, research, career development, and Title IX and civil behavior. Over the course of the year, we then built on this foundation with a series of events for ladder and senior faculty, with further programming for non-ladder faculty as a goal for AY 2019–20.

In support of tenure-track faculty, OFA offered two programs and piloted a third program. First, as in past years, the Standing Committee on Women (SCW) held two brilliant mini-symposia (one per semester), enabling female tenure-track faculty to present their scholarly work, gain feedback from FAS senior leadership and faculty colleagues, and forge connections across their division or School. In AY 2018–19, these mini-symposia featured faculty from the Division of Science and the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS). Second, as in past years, OFA connected interested faculty to academic coaching. Several tenure-track colleagues signed up for either one session or a series of four sessions with certified professional coaches to tackle issues related to academic life.

In addition to these programs, OFA piloted the Faculty Working Group (FWG) program. FWG brings tenure-track faculty together on a regular basis, in small groups conducive to low-risk, high-impact scholarly conversations—to test ideas, give and receive feedback on works-in-progress, share information on professional events and resources, and otherwise leverage the knowledge, experience, and support of peers. More than 30 faculty from the three academic divisions and SEAS participated, and OFA is refining the program for its next iteration this coming year.

In addition to these forms of support for tenure-track faculty, OFA expanded management training for tenure-track, tenured, and senior non-ladder faculty. Many FAS faculty have asked for expert guidance in navigating the transition from being an individually productive teacher and scholar to assuming a leadership role as part of a team, whether it be a research group, a departmental program or office, a center, or other FAS unit. To help meet this need, OFA organized two events in AY 2018–19 and piloted a third program.

First, in Fall 2018, department chairs and area chairs, Directors of Undergraduate Studies (DUS), and Directors of Graduate Studies (DGS) participated in a workshop on how to give productive feedback. This workshop, led by Gillien Todd, Lecturer on Education (Harvard Graduate School of Education) and Lecturer on Law (Harvard Law School), addressed best practices in giving encouragement, listening, and providing constructive feedback. In Spring 2019, OFA held its annual orientation for new department and area chairs. This event addressed administrative and budget matters, faculty professional development and mentoring, Title IX issues, and other chair responsibilities. In the second half of the orientation, open to DUSs and DGSs as well, Gillien Todd led a workshop on “Negotiating with Faculty Peers: Moving Forward While Preserving Relationships.”
In addition to these events, OFA, in partnership with Harvard’s Center for Workplace Development, piloted a program for tenured faculty called “Training for Faculty who Manage Staff.” As a training that OFA hopes to roll out once a semester, this session discussed civility in the workplace, bullying and unprofessional conduct, elements that make a good manager, and how to promote a productive work environment. Faculty feedback was positive, and OFA will partner with FAS Human Resources in developing the next iteration of this program.

In AY 2018–19, the FAS Science Division also offered professional development opportunities geared toward scientists. These included a Fall-term workshop on “Strategies for Success in Collaboration and Team Science,” led by L. Michelle Bennett, Director of the Center for Research Strategy at the National Institutes of Health’s National Cancer Institute, and a Spring-term lunch seminar on “Managing Your Online Professional Identity,” led by Amy Van Epps, Director of Science and Engineering Services in the Harvard College Library.

OFA is excited to continue developing and refining programming that supports the professional development of our faculty.
We present our financial results in several views. Except where specifically noted, these include the results of the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS).

Modified GAAP: The "Modified GAAP" (Generally Accepted Accounting Principles) view describes the FAS's internal income statement in a way consistent with the University's external statements. In this view, depreciation—or the annual wear and tear on physical assets such as buildings and equipment—is included as an operating expense, while principal payments on internal debt are excluded.

Managerial View: The Managerial view focuses on our overall change in cash, where a surplus represents an increase in reserves and a deficit represents a decrease. The managerial view incorporates all cash expenses, whether generated through operations—the teaching and research activities at the FAS—or through capital expenditures (i.e., construction activities and the purchase of certain equipment).

Consolidated and Core Views: The FAS budget is both large (approaching $1.6 billion) and highly decentralized, with significant spending occurring within the direct control of over 150 separate departments, centers, libraries, and museums. Within the Managerial view, the Consolidated Statement of Activity presents important categories of revenues and expenses of the FAS as a whole. This view combines what is typically called the “Core” of the FAS (which comprises the faculty, the College, and the Graduate School of Arts and Sciences) together with the other major affiliates of the FAS (i.e., Athletics, the Division of Continuing Education, Dumbarton Oaks, the Harvard College Library, the Museums, and the John A. Paulson School of Engineering and Applied Sciences). Given that the Core constitutes approximately 71 percent of both consolidated revenues and consolidated expenses, we also present a Fiscal Year 2019 Statement of Activity for just the Core.

Balance Sheet View: Finally, we include a Balance Sheet for the FAS, another statement that measures the FAS’s financial health. The Balance Sheet displays the FAS’s assets, liabilities, and accumulated results of its operations over time as of the end of each of the last two fiscal years.

It is important to note that these results are not audited, nor should they be confused with the audited financial statements of Harvard University as a whole, which are published in the Fall by the University finance organization. However, we have worked with the University to ensure that our figures and theirs agree.
Overview and Outlook

This report and the accompanying Financial Statements expand on the following highlights:

• The FAS completed Fiscal Year 2019 operations with a $13.6 million surplus in the Modified GAAP view. Achieving Modified GAAP balance at the school level has been a University priority for several years, albeit one that has been challenging for the FAS to achieve. This is the second consecutive year with a GAAP balance.

• In the Managerial view, the consolidated, all-funds result was a surplus of $65.7 million. This figure reflects a restructuring of the debt the FAS is scheduled to pay to the University for past and current capital projects. This restructuring has the effect of creating a modest cash cushion in lieu of a cash deficit, much needed in a time of sustained financial challenges and uncertainty.

• Expense growth at 4.5 percent was once again controlled to less than revenue growth, which was 4.7 percent.

• The FAS continued to invest strategically in its research and teaching mission and the student experience. To enable the FAS’s capacity for investments, we continue to focus on conserving unrestricted cash and reserves. The aforementioned debt restructuring was related to this objective.

• The FAS’s balance sheet reflects an increase in Total Net Assets of $678.4 million or 3.5 percent during Fiscal Year 2019, mostly attributable to endowment earnings of 6.5 percent, offset by increased internal debt obligations related to House Renewal and the debt restructuring.

• Among many accomplishments in her first year in the role, Edgerley Family Dean of the Faculty of Arts and Sciences Claudine Gay provided leadership in putting the mission first: prioritizing investments in the scholarly enterprise, innovative teaching, and the student experience.

Fiscal Year 2019 Results: Modified GAAP surplus achieved

In the Modified GAAP view, the FAS financial results continue the steady improvement seen in recent years. Through continued discipline and management actions, we achieved a surplus of $13.6 million, an improvement of $10.5 million from the Fiscal Year surplus of $3.1 million. Excluding SEAS, the Modified GAAP surplus for the FAS was $20.2 million. This is the second consecutive year in which the FAS has achieved a Modified GAAP surplus.

In the management or cash view, the bottom-line results reflect a Consolidated, all-funds surplus of $65.7 million, a slight improvement of $0.9 million over Fiscal Year 2018. The all-funds result for the Core alone declined from a surplus of $62.9 million in Fiscal Year 2018 to a surplus of $50.1 million in Fiscal Year 2019. Core unrestricted results are closely watched as they are what fill or drain the FAS cash reserves, and are the funds that the FAS draws upon to provide budgetary support to departments and other units. The Core unrestricted results showed deterioration of $8.9 million in Fiscal Year 2019, a surplus of $16.1 million compared to a surplus of $25 million in Fiscal Year 2018. As recently as Fiscal Year 2014, the FAS had a Core unrestricted deficit of $55.1 million.
The surpluses in the management views reflect a restructuring of internal debt according to an agreement entered into with the University in May 2017. Without it, the underlying unrestricted operating results would be a deficit, though the all-funds result would still be a surplus.

The level of unrestricted reserves provided through the refinancing is a welcome, but modest, cushion against future shocks and uncertainty. Even after the increase in the past year, unrestricted reserves remain well below what might be considered adequate for an entity of the FAS’s size. The FAS currently has approximately $70 million in unrestricted reserves, equivalent to 5 percent of the total budget. This is one-half of the benchmark of 10 percent considered advisable. (Note: Reserves held in the quasi-endowment bring the reserve level to 12 percent.) Moreover, the short-term relief afforded by the debt restructuring will give way to higher costs in time as the FAS compensates the University for reduced payments in the early years.

Revenues. In the management view, on a Consolidated all-funds basis, FAS total revenues grew by $71 million or 4.7 percent from $1.50 billion in Fiscal Year 2018 to $1.57 billion in Fiscal Year 2019. The endowment distribution, which represents 49 percent of FAS revenues, grew by $33.7 million or 4.6 percent, from $730.3 million in Fiscal Year 2018 to $764 million in Fiscal Year 2019. The endowment distribution to the FAS was net of $84.9 million for central administration.

Other contributors to revenue growth were: Grants and Contracts – direct (+6.6 percent or $11 million), Net Tuition and Fees (+5.4 percent or $16.8 million), and Other Investment Income (+111 percent or $6.2 million).

A bright spot was the significant growth in two revenue sources related to faculty research endeavors: Non-federal sponsored funding (+21 percent or $11.4 million) and Royalty income (+150 percent or $14.7 million). More detail on these and other Fiscal Year 2019 revenues can be found in the accompanying Financial Report.

Offsetting these areas of growth was a decrease of $16.3 million or 14.1 percent in Current Use Gifts. Fiscal Year 2018 was the final year of the Campaign for Arts and Sciences, and Current Use Gifts were higher that year as a result of the final efforts to conclude the campaign.

Expenses. In the management view, on a Consolidated all-funds basis, FAS total expenses grew by $64.3 million or 4.5 percent, from $1.43 billion in Fiscal Year 2018 to $1.49 billion in Fiscal Year 2019. Approximately two-thirds of the FAS’s expenses relate to people and space, and these major categories are described below. Detail on other expense categories can be found in the accompanying Financial Report.

Salaries, Wages, and Benefits: Faculty and staff compensation (salaries, wages, and benefits) represents the largest component of the FAS budget. Salaries, wages, and benefits increased by $33 million or 4.8 percent over Fiscal Year 2018 levels. Sixty percent of this increase, or $19.7 million, was growth in earnings of faculty and other academic personnel. Approximately $8 million was growth in staff earnings, reflecting a combination of annual and contractual increases, position reclassifications, equity adjustments, other pay increases, and modest (1.7 percent) growth in staff headcount. Finally, growth in the cost of benefits totaled $5.3 million or 3.7 percent.

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1 The agreement in effect creates a new schedule for repaying internal debt to the University, which has been borrowed by the University treasury and loaned to the FAS with interest, consistent with the practice across Harvard for financing some capital improvements. Specifically, in the new schedule the FAS will pay the University the same amount each year over 20 years, rather than greater amounts in the beginning and lower amounts in the future. This produces near-term budget relief in years 1-10 in exchange for greater payments in years 11-20. The payment schedule incorporates an interest charge at the rate of 4 percent per year.

To maintain consistency in our financial statements, the regular amount of debt service will continue to be budgeted and reported. The level payment contemplated in the agreement will be effectuated through an operating loan which, when combined with the debt service payment schedule, will yield a net flat payment for 20 years.
In Fiscal Year 2019, FAS faculty and instructors stood at a count of 1,068 Full-Time Equivalents (FTE) compared to 1,061 in Fiscal Year 2018. (Please see the “Faculty Trends” section of the Annual Report for a more detailed discussion of faculty counts and growth.)

We continue to monitor staff headcount closely and look for opportunities for efficiency. On June 30, the FAS staff stood at a count of 2,726 Full-Time Equivalents (FTE) compared to 2,682 FTE at the end of Fiscal Year 2018, a net increase of 44.7 FTE (+1.7 percent). Half of this FAS growth was localized in the Social Sciences (+22.8 FTE, +5.8 percent), all in term-limited roles supported by sponsored funding.

Above-average growth also occurred in SEAS (+7.7 FTE, +4.3 percent), Arts and Humanities (+6.5 FTE, +2.9 percent, almost all of which were in the new Chinese Art Media Lab), and Harvard Museums of Science and Culture (+3.0 FTE, +8.1 percent).

The FAS’s position review process, which places extra scrutiny on positions funded with unrestricted dollars, is more streamlined for positions on sponsored research funds or restricted funds. In addition, positions on sponsored or other time-limited funding sources are almost always term-limited to match the availability of the funds supporting them. Of the 44.7 FTE growth in Fiscal Year 2019, 94 percent (41.8 FTE) of net new staff positions were term-limited. This is a significantly higher percentage than in past years.

Operation, Maintenance, and Renewal of the Physical Plant:
The FAS’s large physical plant is comprised of over 10 million square feet in 265 buildings. The FAS Office of Physical Resources and Planning (OPRP) staff is dedicated to stewarding FAS facilities through professional building management, investment in life-safety, and building systems renewal. The costs to operate the FAS’s facilities increased by $1.8 million or just under 1 percent in Fiscal Year 2018, from $188.9 million to $190.7 million, representing 13 percent of total expenses. (Including interest and depreciation, the facilities-related GAAP costs rose to $361 million or 24 percent of total expenses.)

Both the operating budget and capital budget of the FAS reflect significant spending on facilities renewal. In Fiscal Year 2019, the FAS invested $52.6 million in operating funds and $170.6 million in capital expenditures for renewal of FAS Core, Affiliates, and SEAS facilities. Included in that investment, $91.2 million was invested in the House Renewal program this year. These investments, which represent a renewal level of 3.1 percent, were significantly above the general guideline for renewal investment (2.5 percent of Current Replacement Value, or CRV). Even without the significant investment in the Houses, the FAS was at a renewal level of 1.8 percent and the FAS Core was at 2.3 percent. Major renewal projects and other notable capital investments during Fiscal Year 2019, including House Renewal, are described later in this report.

In Fiscal Year 2019, FAS OPRP continued to enhance facilities management and improve efficiencies via integration and coordination in planning, project management, and building operations with Athletics, SEAS, and the Libraries. In Fiscal Year 2019, the management of the Carpenter Center was successfully integrated into OPRP, as was management of the Division of Continuing Education (DCE) facilities.
Targeted Investments Included in the Fiscal Year 2019 Results

**Financial Aid**

Undergraduate financial aid has grown significantly since Harvard’s leading-edge financial aid initiative (HFAI) was introduced, from $73 million in Fiscal Year 2004 to $200.9 million in Fiscal Year 2019. The growth reflects Harvard’s deep commitment to recruiting outstanding students regardless of their ability to pay, with policy changes that eliminated or significantly reduced the parent contribution for many aided families; and increased efforts to recruit, admit, and support excellent students regardless of their financial need. During Fiscal Year 2019, approximately 54 percent of undergraduate students received some level of scholarship grant aid to Harvard. One in five undergraduate families are not required to contribute to the cost of their child’s education, as they have annual incomes of less than $65,000. Harvard College financial aid awards consist of grants; students are never required to take out loans to cover the cost of their education, although they are expected to contribute through term-time work or summer earnings.

**Harvard College**

Under a strengthened Office of Undergraduate Education (OUE), the College achieved several key milestones in undergraduate academics during Fiscal Year 2019:

- Completed development of the new Gen Ed curriculum, launching in September of 2019 with 44 courses during the Fall term and with reorganized program leadership and support.

- Planned a new Academic Resource Center (ARC) to provide both College and graduate students a wide range of evidence-based support services that help strengthen academic skills. The ARC, which will launch in January 2020, replaces the one-on-one counseling-based model of the Bureau of Study Counsel.

- Co-located several OUE offices to enhance collaboration opportunities and accessibility to students of all mobilities. Now in physical proximity to one another are: the offices for International Education, Freshman Seminars, the new Academic Resource Center, and OUE Administrative Support.

Other developments for College students included the following:

- Launch of a new integrated Dean of Students Office to strengthen student affairs coordination for all four classes.

- A successful pilot by the Accessible Education Office (AEO) of a centralized testing center to administer course exams that must take place outside of the regular class time or space, especially for those students requiring some kind of accommodation.

- Efforts to broaden public service opportunities for undergraduates included expanding Freshman Day of Service to all incoming First-Year students, and creating the role of Faculty Director for Phillips Brooks House Center for Public Service and Engaged Scholarship (PBHA).

**Dean’s Competitive Fund for Promising Scholarship**

In the Fall of 2016, the FAS launched the inaugural competition for the Dean’s Competitive Fund for Promising Scholarship to provide support for eligible projects at critical stages when external funding may not be attainable. In Fiscal Year 2019, the fund provided a total of $2.5 million in support of 66 faculty projects across all three FAS divisions and SEAS. The fund provided support for a wide range of projects, including the investigation of the physical limits of the solid-state greenhouse effect; the collection of pilot data in order to translate mechanisms linking child trauma and youth psychopathology into an early intervention; and the development of a digital platform containing historical and scientific information aimed at deepening our understanding of the uses and role of color in Asian art. Since its inception, the Dean’s Competitive Fund for Promising Scholarship has provided almost $6.5 million in support of 182 compelling faculty projects.
Dean’s Leadership-Funded Investments

The most flexible, current use and unrestricted funds supplied through philanthropy—combined with a budget process grounded in priority setting and savings where possible—supported a number of investments in Fiscal Year 2019. These included: Embedded EthiCS, an innovative teaching partnership between Philosophy and SEAS; a new GSAS Student Center, aimed at enhancing the student experience for graduate students; the John Harvard Distinguished Fellows, a new postdoc program that allows us to recruit outstanding young scholars and create a robust intellectual community; the purchase of new, core scientific equipment, like a one-of-a-kind electron microscope that is now the highest resolution system in the U.S. and is opening up novel imaging modalities; and support for “First Generation” students, including the FYRE program, which helps first-generation students build a stable foundation for navigating life at Harvard.

Research Computing

Strategic investments in professional staff, advanced cyber infrastructure, data centers, and networking have advanced FAS Research Computing (FASRC) to become a world-class facility in partnership with the MGHPCC, a consortium with our colleagues at MIT, Boston University, Northeastern University, and the University of Massachusetts. In Fiscal Year 2019, FASRC’s director was named University Research Computing Officer with a formal connection to the CIO’s office. This partnership, which also includes a newly created University Research Data Management Officer, has produced the first Harvard Research Computing Strategic Plan, a Harvard-wide data center consolidation plan, a single data use agreement platform, and a central research data management website. A strategic investment was made to upgrade the power and add direct water cooling in MGHPCC to support next-generation high-performance computing. FASRC has also started a new Research Software Engineering team that is dedicated to working directly with scientists to create modern and sustainable software tools that enhance research productivity.

Graduate Student Benefits and Support

In Fiscal Year 2019, the Graduate School of Arts and Sciences (GSAS) continued its program to enhance support for its students and the student experience. Among the investments this past year, GSAS:

- Worked with the College to reorganize Dudley House into two distinct parts, refocusing the GSAS Student Center to address the specific needs of graduate students.

- Prepared to launch The Advising Project, a two-year initiative that will consider the best practices for effective advising relations, including engaging students, alumni, faculty, and administrators. Specifically, last year GSAS established a working group, began developing a project plan, and started staff recruiting.

- Increased alumni outreach efforts to engage and connect alumni with students for mentoring and career connections.

Investments in Student Aid for FAS-based graduate programs were as follows:

- FAS-funded increase of GSAS stipend/salary support for FAS-based PhD students rose by $2.6 million, from $83.7 million in Fiscal Year 2018 to $86.3 million in Fiscal Year 2019.

- FAS-funded increase of GSAS aid toward tuition and health fees for FAS-based PhD students rose by $3.0 million, from $63.5 million in Fiscal Year 2018 to $66.5 million in Fiscal Year 2019.
Capital Investments

In Fiscal Year 2019, approximately $22.4 million was spent on 31 capital projects relating to faculty appointments and to facility needs for changing research. These included the construction of a special cleanroom environment for the study of ancient DNA, an aquatics facility supporting research involving cephalopods and sharks, a large axolotl facility for research in limb regeneration, and a sound-proof lab to allow for behavioral testing of canine subjects.

Classroom Modernization

The FAS routinely modernizes and upgrades teaching facilities. In Fiscal Year 2019, a major project was accomplished in the Science Center, completely renovating Lecture Halls C and D, including a new HVAC system, upgraded fire protection system, upgraded electrical and A/V systems, and new seating, lighting, and interior finishes. A major reconfiguration of Robinson Hall, the home of the History Department, was also completed in Fiscal Year 2019. This project provided a new elevator, new restrooms, a modern fire sprinkler system, enhanced and modernized classrooms, reorganized and improved History Department administrative and faculty offices, and graduate student areas, all made fully accessible.

Program Support

Many projects undertaken and/or completed in Fiscal Year 2019 enhanced the FAS student and research community activities on campus. These included the renovation of the fourth floor of Lamont Library to house the Department of English Creative Writing Program. This renovation provided 11 new offices, a new reception area, and fully upgraded lighting, electrical and mechanical systems; and the Language Center, formerly housed in that space, was relocated to newly renovated quarters in the Science Center. Other program support included the conversion of two former squash courts into a new indoor climbing facility at the Quadrangle Recreational Athletic Center (QRAC) and the renovation of the Student Organization Center at Hilles to accommodate several outdoor-oriented clubs and associated gear storage. In addition, Fiscal Year 2019 saw the commencement of a major renovation of the Hilles Cinema that will transform it into a multiuse collaborative space to be shared among three academic departments (Computer Science; Theater, Dance, and Media; and Art, Film, and Visual Studies) as well as with the Office of Career Services and the Office of Student Life. In addition to introducing theatrical lighting, a sprung dance floor, and advanced audio/visual equipment, this renovation will make the Cinema and adjacent restrooms fully accessible for the first time.

Infrastructure

A large number of projects were completed in Fiscal Year 2019 that renewed infrastructure in the FAS facilities and campus. Phase one of a multi-year program to convert all building control systems to the next-generation technology is nearly complete, and Phase two will launch early in Fiscal Year 2020. New roofs were installed on the Littauer Center of Public Administration, the Science Center, and the Bio Labs; fire alarm system upgrade projects were undertaken in Sever Hall, Cabot House, Wigglesworth Hall, and 74 Mount Auburn Street. Mechanical, HVAC, and/or electrical system renewal projects were completed in 54 buildings, including the Biological Research Infrastructure (BRI), the Chemistry Complex, Hoffman Lab, and William James Hall. As of the end of Fiscal Year 2019, a massive, multi-year HVAC replacement project in the Bio Labs is complete. The entirety of the building, including over 30 science research groups, is now served by centralized air handling and exhaust systems that feature state-of-the-art energy recovery. This project also added four much-needed bathrooms to the Bio Labs building and updated several building support services, including renovating the Fly Facility and consolidating the teaching lab prep functions.
House Renewal

Fiscal Year 2019 saw continued progress in the FAS’s massive undertaking to renew the undergraduate residential Houses. Following four successful projects (Stone Hall of Quincy House, McKinlock Hall of Leverett House, Dunster House, and Winthrop House), the construction of Lowell House was completed and utilized for Commencement in June 2019 and welcomed students home in August 2019.

Planning, design, and construction for Adams House renewal continued in Fiscal Year 2019, with Phase one (Claverly Hall) of Adams House renewal commencing construction in June 2019 and completion expected in August 2020. The Adams House Phase two (Apthorp House and Randolph Hall) construction documents were completed and put out to bid in August 2019, and the design of Phase three (Russell Hall and Westmorly Court) is expected to commence in September of 2019. The construction of all three phases of Adams House will be completed over four academic years, with the full renovation of Adams House expected to be completed in August of 2023.

As of Fiscal Year 2019, the FAS has renewed a total of 791,000 GSF of House space, including 1,513 beds. All renewed buildings are now fully accessible to those with mobility challenges, and all work has improved the operational efficiency and sustainability of the Houses. All renewed buildings have attained at least a LEED Gold certification, with Stone Hall attaining LEED Platinum certification. The renewed buildings also now accommodate 32 percent more academic and social spaces, mostly through renewing and repurposing lower-level spaces. All the renewed Houses are also equipped with new shelter-in-place (lights, heat, food services) emergency power in the event of power outages due to storms or other causes.

In Fiscal Year 2019, the FAS invested $91.5 million in House Renewal project construction and planning, as reflected in fixed assets, and spent $7.5 million on House Renewal-related operations excluding depreciation. In addition, the FAS paid the first year of debt service payments in the amount of $4.9 million. As of June 30, 2019, the Corporation has authorized the FAS to spend $960 million, and all projects have been completed on time and within the Corporation authorization.

Ongoing operational improvements:

In Fiscal Year 2019, the FAS partnered with University teams on multi-year large-scale enterprise initiatives with a significant focus on three major multi-year projects:

1. **Buy2Pay**, the University’s new end-to-end procurement-to-payment system, which automates the full process including contract management and data analytics.

2. **Position, Tracking, and Reporting (PTR)**, an integration of nine existing systems with position information to provide University-wide tools and integrations that will streamline and supplement existing position management practices.

3. **File Share/OneDrive**, which will convert all staff and faculty personal drives files and data to Microsoft OneDrive. A conversion of department drive/shared files will follow. This system ensures data security and accessibility and serves as a University-wide collaboration tool.

Risk mitigation, stronger data management and analytics, as well as efficiency/transparency were the focus of all these projects. Also central to the work were stronger communication, coordination, and change management strategies for all local and University initiatives. The Harvard Training Portal (HTP) was leveraged to track registrations, create class rosters, and distribute pertinent materials prior to educational sessions offered in support of both the new and existing administrative systems.

Transparency and effectiveness in technology investments are achieved through the FAS’s involvement with the University Project Review Committee (PRC), the University Information Technology Capital Review Board (ITCRB), and the FAS Project Review Board (PRB), and various other project engagement, steering, and executive committees.
Balance Sheet View

As set forth in the Consolidated Balance Sheet, Total Net Assets for the FAS grew by $678.4 million or 3.5 percent during Fiscal Year 2019, from $19.6 billion at the close of Fiscal Year 2018 to $20.2 billion at the close of Fiscal Year 2019.

The largest contributor to the Fiscal Year 2019 increase in Total Net Assets was growth in Long-term investments (primarily endowment), which grew by $528.2 million or 3.1 percent after withdrawals for FAS operations and central university administration. Fixed assets, net of accumulated depreciation, increased by 3.1 percent or $66.8 million. Deposits with the University increased by $101.1 million or 14.2 percent over the prior year, reflecting debt-funded construction. There was a 12.1 percent increase ($79.8 million) in pledges receivable; this result incorporates an accounting standard change that was adopted in Fiscal Year 2019.

At June 30, the FAS’s Long-term investments (primarily endowment) stood at $17.5 billion, up 3.1 percent or $528.2 million from $17.0 billion a year ago. In contrast, this figure was $16.7 billion at the close of Fiscal Year 2008, before dipping to a low of $11.7 billion at the end of Fiscal Year 2009. At $17.5 billion, the FAS’s endowment position in nominal dollars at June 30, 2019 has surpassed its value as of June 30, 2008. The loss of real value over that time is significant, however, despite a relatively low-interest environment. Adjusting for higher education inflation, the endowment would need to be $20.7 billion today, significantly more than the actual value of $17.5 billion, to have the same buying power today as in Fiscal Year 2008.

Total Liabilities increased by 8 percent or $104.1 million. Predominantly, this increase related to an increase in the FAS’s long-term debt portfolio of $114.7 million. Of this total, $81.3 million related to additional Construction in Progress (CIP) loan costs was incurred as the result of the completion of several house renewal projects. $30.1 million was related to the decision to restructure the FAS’s internal debt schedule with the University.

The Outlook: Fiscal Year 2020 and Beyond

At the time of our budget submission, the FAS (not including SEAS) projected a Modified GAAP deficit of $5.5 million and an all-funds cash surplus of $42 million. To the extent possible, we will endeavor to improve on these results over the course of the year, as we have done in each of the last several years.

The challenges inherent in higher education finance remain and deepen despite the better results reported here. The University has issued planning guidance which incorporates very constrained endowment results for an extended number of years, and further is leading an exercise to plan recession scenarios and potential responses. Having experienced over a decade of revenue constraints, and achieving low expense growth despite making significant needed investments, the FAS now has more limited options and much smaller flexible reserves than at the outset of the 2008 recession. The ability of the FAS to maintain its breadth of excellence and affordability for students and families will continue to face headwinds.

FAS Dean Claudine Gay is committed to working within these constraints to continue to invest in the scholarly enterprise, innovative teaching, and the student experience; and to advance scientific discovery and path-setting creativity.

The financial performance and investments described in this report reflect the leadership, creativity, and hard work of colleagues throughout the FAS and business partners elsewhere at Harvard and the generosity of alumni.