Pilot Report on University Finances: Stage 1

University Committee on Planning and Budget

Spring 2019

Introduction

In recent years, Planning & Budget (P&B) has discussed the need in our community for a robust shared understanding of the University's finances. In the present financial climate, we believe that such shared understanding is necessary not only for effective shared governance, but also for successful implementation of the new Strategic Plan. On the one hand, any University budget or financial model encodes a set of values that deserve to be made explicit; on the other hand, responsible discussion of how best to realize our shared values requires understanding the financial constraints under which we operate. Thus, we have embraced the faculty's charge to report on University finances as a valuable opportunity to take an important step in shaping Bucknell's future and culture.

Because there is a critical and immediate need for basic information about University finances, we will deliver our report in two stages. This is Stage 1. It covers basic features of the University's current financial picture and some of the challenges we face due to external social and economic trends that are largely beyond our control. Stage 2 will be more complex: it will build on Stage 1 to address specific areas of concern determined by direct consultation with the community (as requested by the faculty). In Fall 2019, P&B will begin this consultation process and aim to deliver Stage 2 in Spring 2020.

We hope that Stage 1 of this report will lay the foundation for well-informed, transparent, and productive conversations about University finances in AY 2019–20 and beyond. In this context, it is worth noting that one of the initiatives in the new Strategic Plan is the development of a Strategic Financial Plan to guide the University over the next 5–10 years. While the Board of Trustees will have ultimate authority over this plan, P&B expects to work closely with relevant governance committees—such as the Committee on Admissions and Financial Aid—as well as the President and other members of the administration in its development. In so doing, we will represent the broader campus community and work to guarantee a transparent, open process.

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Stage 1 divides into six parts and three appendices:

While we designed the six parts of Stage 1 to be read sequentially, each stands on its own. Still, to get the complete picture, we recommend reading through the full Report before returning to points of particular interest.

1. Stage 1 Summary

The main goal of Stage 1 of P&B's Pilot Report on University Finances is to catalyze informed conversation about some of the most important choices that we face as an institution. To this end, we begin by comparing Bucknell's endowment and operating costs to those of some peer and aspirant institutions (Part 2). This illustrates how, despite our relative financial strength, we remain highly sensitive to social and economic trends that wealthier institutions can more easily weather. Next, we provide a sketch of Bucknell's current budget (Part 3). Here we identify key features such as the proportion of expenses dedicated to faculty and staff compensation and recent increases in the cost of healthcare. With this basic information in place, we place Bucknell's finances in the context of some critical social and economic trends that pose significant challenges for higher education (Part 4). Some of these trends—such as shifting demographics and growing widespread frustration over the costs of higher education—pose special problems for institutions such as Bucknell. What can we do in response? Many things: for example, we might reduce the price of a Bucknell degree, or increase our financial aid offerings—but at what cost? In an effort to begin to answer this question, we build on Finance Office budget projections to estimate the costs of four candidate actions (Part 5). The results, while imperfect, are sobering. They suggest that realizing even some of our core institutional goals—including many in the Strategic Plan—will lead to substantial deficits unless accompanied by non-trivial increases in revenue and simultaneous reductions in expenses. In P&B's judgment, a new comprehensive fundraising campaign is critical, but by itself probably too little too late; as the Strategic Plan puts it: "a campaign alone cannot achieve the bold change the University seeks." Thus, while we are not yet in crisis, P&B recommends that the University as a whole immediately undertake an unflinching and rigorous assessment of its finances. This recommendation both complements the strategic initiative for the development of a Strategic Financial Plan by Spring 2020 and reinforces the need for Stage 2 of this pilot report.

Our outlook may seem pessimistic; we see things otherwise. Relative to most institutions of higher education, Bucknell is in a position of great strength. We have choices. Many possible futures lie within our grasp. Thus, P&B offers this report as a call to action, the first step in a clear-headed assessment of how in the coming decade Bucknell can give fuller expression to the highest values embedded in its community and enshrined in its mission and Strategic Plan.

2. The Big Picture: Bucknell's Relative Financial Position

The first step in understanding Bucknell's financial position is to recognize that all higher education institutions are unique; we differ in important ways from some institutions with which it is tempting to draw comparisons. While we are in no danger of shutting our doors, Bucknell is financially constrained in ways that institutions such as Williams and Swarthmore are not. Consider the following 2018 endowment comparisons:

	Endowment (2018)	Endowment Income to Operations	Endowment/ Student	Endowment/ Student (Ratio to Bucknell)
Williams	$2,670M	$110M	$1,319,000	5.6:1
Swarthmore	$2,116M	$82M	$1,288,000	5.5:1
Richmond	$2,506M	$119M	$686,000	2.9:1
Colgate	$935M	$47M	$326,000	1.4:1
Furman	$703M	$33M	$252,000	1.1:1
Bucknell	$851M	$43M	$234,000	1:1
Lehigh	$1,302M	$78M	$200,000	.85:1
Gettysburg	$331M	$13M	$135,000	.58:1

Bucknell's 2018 operating costs, however, do not differ significantly.

	Operating Costs (2018)	Operating Cost/Student	Annual Endowment Income as % of Operating Cost
Williams	$249M (103%)	$119,000	44%
Swarthmore	$169M (70%)	$103,000	49%
Richmond	$295M (122%)	$81,000	40%
Colgate	$206M (85%)	$72,000	23%
Furman	$241M (100%)	$66,000	18%
Bucknell	$405M (168%)	$62,000	19%
Lehigh	$161M (67%)	$58,000	20%
Gettysburg	$131M (54%)	$57,000	10%

The fact that we have less endowment income per student to draw on means that Bucknell is to a large degree a "tuition-driven" institution. To maintain operations at their current level and not run a deficit, we must accrue about $200M in cash in tuition, fees, and gifts to current operations every year. This places a significant constraint on how much financial aid we can offer—and so, on whom we can enroll. The fact is that we need a large proportion of "full-pay" and "better-pay" students every year to stay solvent. Changing this enrollment pattern requires a significant shift in our revenue sources or massive cuts to spending.

Unfortunately, these financial realities place relative limits on how "bold" we can be in planning for the future. Right now, we have an institutional reputation, approach to admissions, and institutional culture that keeps us in the black—at least in the current higher education environment. Substantial changes on any front would be risky: a significant shortfall in enrollment or retention of full- or better-pay students would result in a large budget deficit. Moreover, our dependence on full- and better-pay students makes us highly sensitive to social and economic trends that wealthier institutions can more easily weather. And when we are faced with trends that are unfavorable—as we are now—maintaining the academic quality of the students we enroll will require controlling costs in ways that wealthier institutions may not need to do.

Parts 4 and 5 explore these issues in greater detail. Part 4 introduces social and economic trends affecting the higher education landscape that P&B judges highly relevant to Bucknell. This sets the stage for Part 5, in which we consider possible responses to these trends. First, however, Part 3 presents a current snapshot of the University's budget.

3. The Local Picture: The FY2019 Budget

In FY2019, Bucknell has a $308 million annual gross budget of which $62 million is allocated for financial aid. Revenues and expenses are both budgeted at $246 million (Fig. 1). As is customary, the Board of Trustees approved the FY2019 budget at their meeting in Spring 2018. In any given year, actual revenues and expenses vary more or less significantly from budgeted amounts. However, in FY2019, the Finance Office projects that Bucknell will break even as planned (within $29k). Note that this is just a projection; numerous factors could still alter the final results.

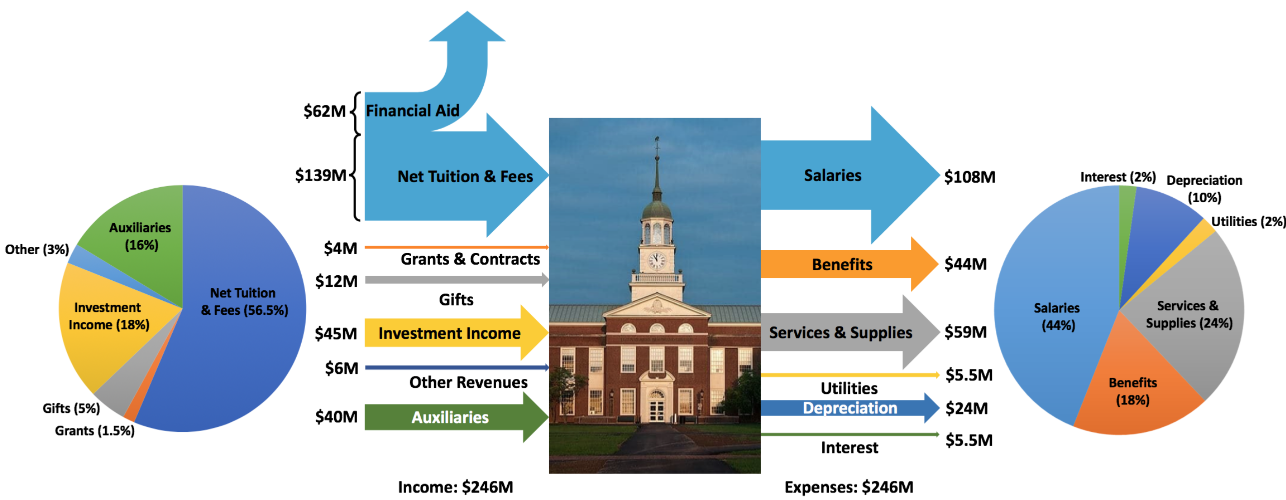

Figure 1: FY2019 Operating Budget. Note that funds allocated to financial aid are reported as a reduction to revenue in the operating budget.

Bucknell's current approach to budgeting is reasonably leveraged but tight, though some special projects have driven recent operations modestly negative. In the FY2019 budget, 72% of revenue comes directly from students. This includes net tuition and fees as well as room & board (the latter is counted under "Auxiliaries" in Fig. 1). Bucknell also has current debt outstanding of $133M on which we pay about $5.5M a year in interest. The estimated fair market value of the endowment at March 31, 2019, is $843 million; the amount of endowment earnings that will fund operations in FY2019 will be $44 million. Overall, compensation and benefits represent the largest component (62%) of budgeted operating expenses.

One notable budgeting challenge that we are watching carefully is the high rate at which healthcare costs for current employees have increased over the last decade (Fig. 2).

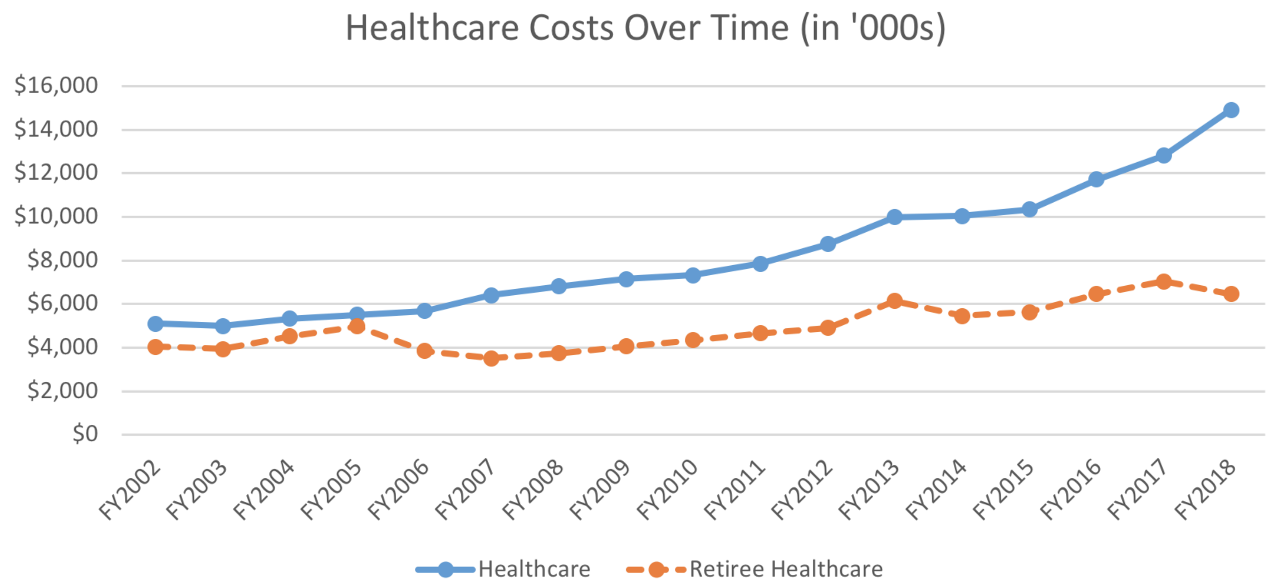

Figure 2: Total annual costs of current employee healthcare and retiree healthcare from 2002–2018.

The result is a historically high percentage of expenses devoted to healthcare. In the FY2019 operating budget, faculty and staff salaries ($108 million) and benefits ($44.4 million) account for 71% and 29% of the compensation budget; this translates to 44% and 18% of the full University budget. Thus, at $14.4 million, the cost of healthcare for current employees is nearly one-third of the total benefit budget and 6% of the full budget. Compare 2002, when the $5.1 million we spent on current employee healthcare accounted for 25% of the total benefit budget and 4% of the full University budget. (In this connection, see also P&B's Interim Report on Retiree Healthcare in Appendix B.)

This concludes our brief sketch of the FY2019 operating budget; we now turn to some social and economic trends affecting the higher education landscape. However, for further detail about how University budgeting has evolved in recent years, see Appendix C for the Finance Office's updated *Finance 101* presentation; and for more on the present budget and future projections, see discussions of the Integrated Financial Model (IFM) in Part 5 and Appendix A.

4. Social and Economic Trends, Traditional Higher Education, & Bucknell

Entering the next decade, large-scale social and economic changes promise to present institutions such as Bucknell with significant challenges in areas including enrollment, finances, and institutional identity. How we can best adapt to these changes has been a regular topic of conversation in recent years at P&B meetings, among senior administrators, and on the Board of Trustees. However, given the size of their potential impact on everyone at Bucknell, the whole community will benefit from understanding these external factors. Thus, the goal of Part 4 is to sketch probable high-impact trends in three areas: (4A) the economic climate; (4B) attitudes toward higher education; and (4C) demographics.

(4A) The economic climate.

Major economic trends are affecting the higher education ecosystem in the United States. Current tuition price increases at private institutions have outpaced the consumer price index for decades (Fig. 1); and this rate of increase cannot be sustained indefinitely, given that incomes in constant dollars have been relatively flat for decades for most income brackets. With income inequality increasing and college increasingly necessary to economic success, the cost of higher education is becoming a social justice issue (see Fig. 2; and note that Bucknell's tuition and fees are higher than the national average of private universities). Higher education debt is growing influencing career choices and impacting home ownership and other major life decisions. Cost pressures on higher education have resulted in systemic changes at most universities such as increased numbers of adjunct and lecturer positions and the proliferation of corporate models for institutional operations. These economic pressures have also affected the decisions made by students and parents. The overall effect is a less stable environment manifest in increasing competition between established schools and the rise of new forms of degree programs. In this environment, tuition-driven schools such as Bucknell must balance the inevitable costs of adapting to these economic trends with the need to maintain sufficient tuition income.

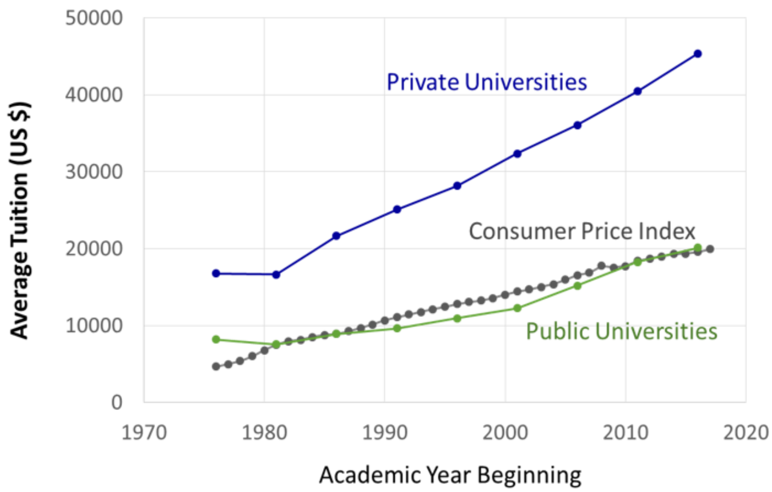

Figure 1: Data from College Board, "Trends in College Pricing," p. 44, 2015.

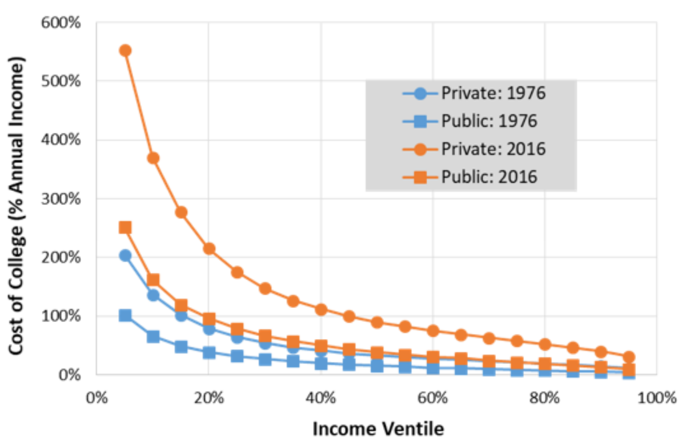

Figure 2: The cost of college as a fraction of annual income by income ventile (average tuition exclusive of discount) for the same years at public and private institutions. Income data obtained here.

Here is a brief snapshot of some of the larger economic issues that affect Bucknell's finances:

- The cost of higher education, particularly at private universities, has outpaced inflation over the last few decades (see Fig. 1 above). Bucknell is no different. In constant 2013 dollars, Bucknell's comprehensive fee was 45% of the median income of families with an 18–24-year-old in the household in 2001. By 2007 it was 63%. In 2013 it was 86%.
- In ten years, if the 2019 comprehensive fee increases at an annual rate of 3.75%, it will be $101,450.
- Nearly 65% of our applicant pool intends to apply for financial aid, a significant increase over ten years ago. We can expect that number to climb as our cost increases outpace the earnings of all but the top-earning college-bound families (see Fig. 2 above).

- According to the annual Sallie Mae survey (2018) of families with college-bound students: 1) 78% placed primary focus on the price of education; 2) 70% (compared to 42% in 2007) said they discarded "high-cost" colleges prior to applications; and 3) 40% of students not attending their first choice college cited lack of affordability as the primary reason.
- While Bucknell primarily enrolls traditional students, currently over 70% of college students are classified as non-traditional, and many are following educational pathways different than Bucknell's four-year-and-out model.
- Bucknell is not alone in its dependence on tuition. Even state schools are becoming more tuition dependent over time (Fig. 3).

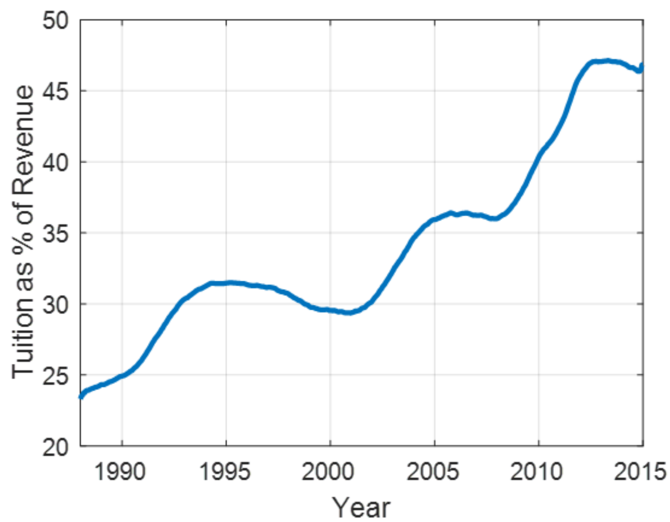

Figure 3: Tuition as a fraction of total institutional revenue at state schools. Data source here.

- In 2007 Bucknell and a number of peer schools had a 30% discount rate; a decade later, Bucknell's rate had hardly changed while many peers had increased their discount rates by 8% (Fig. 4). To match the peer average without making other changes would require adding more than $320M to our endowment principal. The average national discount rate for first-year students reached a record high of 52.2% in 2018–19.

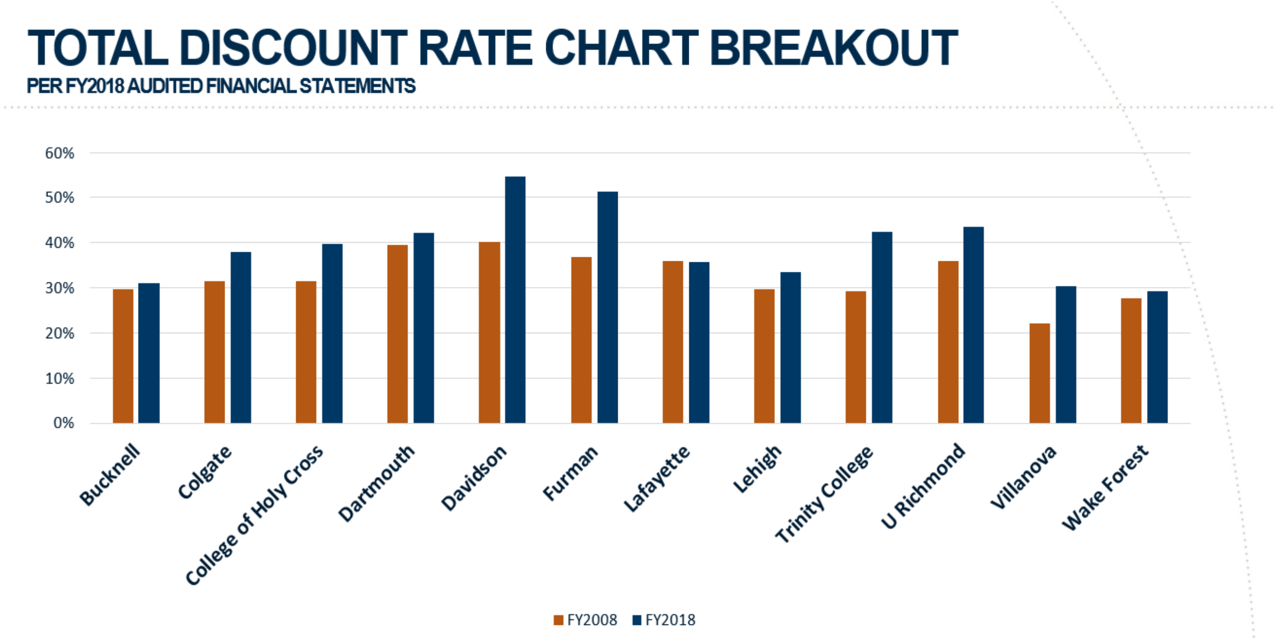

Figure 4.

In summary, the cost of a Bucknell education puts us in a vulnerable position, particularly given our relatively low discount rate.

(4B) Changing attitudes toward higher education.

Higher education has always purported to provide both individual and social goods. For the individual, higher education promises to foster personal development and increase lifetime earning power, while federal and state support of higher education depends on the value of having an educated citizenry. Historically, higher education has made good on these promises (report here); but the data is both complex and nuanced. For example, financial return on investment (ROI) is only weakly correlated with a school's exclusivity and generally uncorrelated with cost (data here). As the costs of college continue to rise, higher education finds itself increasingly vulnerable to charges that it is insufficiently accountable to both individuals and the public.

By many measures, families are increasingly skeptical about the relative benefits of a college education. It is not unusual for families to ask admissions officers for a Bucknell education's expected ROI or to question its value at $70,000 per year. These questions are legitimate—especially when 28% of associate degree holders and some workers with one-year certificates outearn the average bachelor's degree holder (report here). As higher-ed bashing becomes more common in the media, data suggests the general public no longer assumes the benefits of a college education outweighs its costs. For example, 30% of first-year students and 28% of seniors do not consider college to be a good investment (see table here). Similarly, while 55% of parents surveyed in 2009 agreed with the statement that "college is necessary for your children," in 2016 that number had dropped to 42%. Finally, in Gallup polls tracking confidence in "institutions in American society" between 2015 and 2018, higher education showed the largest decline—a full 9%; this was twice that of the second-worst finisher (organized religion).

Given the public skepticism, Federal and State governments are increasingly pushing for accountability in the form of quantitative measures of cost-containment efforts and levels of workforce preparation. For example, the Obama administration sought to increase higher-ed transparency by creating a college scorecard. Under the Trump administration, such efforts continue on both sides of the aisle; and while they have so far had little direct effect on universities, they underscore the significant decline in public trust of higher education.

Unsurprisingly, a primary driver of declining confidence in higher education is that costs have risen faster than the rate of inflation while incomes for most Americans have stagnated. Such rising costs have made investment in higher education problematic for many families, who, when they choose higher education, are increasingly drawn to lower-cost options—a trend manifest in shifts in Bucknell's cross-admit schools. For the Class of 2022, five of the top ten cross-enrolled colleges were public institutions, including the University of Delaware at #5 (three years ago it was #41). Another consequence is increasing competition for students, which we can expect to become only fiercer as the number of college-age individuals declines over the next decade. At the same time, some peer and aspirant institutions will be increasing their enrollment numbers, which will further exacerbate the competition for quality students.

(4C) Demographics.

Over the next ten years, demographic shifts are likely to create significant enrollment challenges for many institutions. As economics professor Nathan Grawe (Carleton College) writes in *Demographics and the Demand for Higher Education* (2018): "Unless something unexpected intervenes, the confluence of current demographic changes foretells an unprecedented reduction in postsecondary demand about a decade ahead." Grawe argues that the 2008 economic crisis caused a deep decline in fertility rates, particularly among white non-Hispanics in the Midwest and Northeast regions. There was a roughly 10% decline in total fertility rate, which is projected to yield a 7–8% decline in high school graduates and (combined with other factors) a 13–14% decline in students attending universities like Bucknell (Fig. 5).

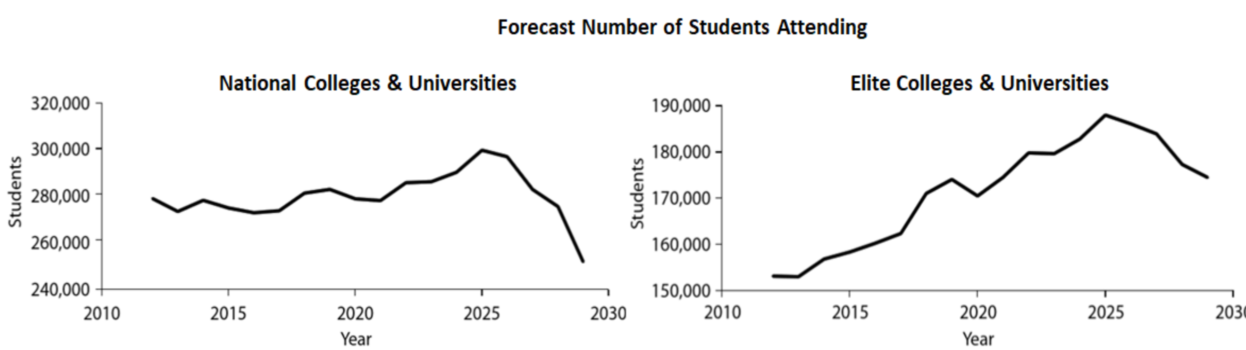

Figure 5: Drops in enrollment vary by type of college or university. Two year and regional universities are expected to see larger drops as a percentage of students. Data from Grawe, Demographics and the demand for higher education, 2018, figure 6.2, p. 72.

Moreover, Grawe takes a pessimistic view of an obvious strategy: to offset shrinking numbers of applicants in the Northeast with increased enrollment from growth areas in the West and Southwest. High school graduates in these regions will be less likely to attend a four-year college; and, when they do, they are likely to do so in home and bordering states and they will require greater financial assistance. Even now, only 18% of first-year students at four-year colleges are enrolled more than 500 miles from home (IHE, 2018).

This problem is widely recognized. Earlier this year, Hampshire College—a member of a five-school consortium including Amherst, Mount Holyoke, Smith College, and the University of Massachusetts at Amherst—announced that it would not enroll a class of 2023 and that it could not survive without merging with another institution. The reason? While Hampshire's price-point is similar to Bucknell's, it has an endowment of only ~$50M, which makes it even more reliant on tuition income. As mentioned above, at the other end of the spectrum are schools such as Williams and Swarthmore whose significant endowments allow them to be altogether need-blind.

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The trends we discuss above pose real challenges for institutions such as Bucknell. The question is how to respond. Part 5 begins to explore the possibilities.

5. Tackling the Future: Estimating Financial Impacts

The main goal of this report is to catalyze informed conversation about some of the most important choices we have as an institution. Bucknell faces many possible paths. However, given the core issues of cost and competitiveness, P&B feels a good starting point is to estimate the independent financial impacts of four candidate actions (explained below). We present these estimates in the form of "Simple Cost Estimates" (SCEs). Correctly interpreting the SCEs requires understanding a bit about how they were generated, and—in particular—what they fail to take into account.

Bucknell's Finance Office forecasts future University revenues and expenses using a complex financial model known as the Integrated Financial Model (IFM). At P&B's request, the Finance Office generated each SCE by varying a single assumption in the IFM and calculating its effect on the bottom line. In two respects, this approach is problematic. For one thing, it falsely presupposes that we can change one budgeting assumption without affecting others. Second, it ignores the fact that the University would balance any one of the candidate actions with other, compensating initiatives, such as the new comprehensive fundraising campaign included in the Strategic Plan. For these reasons, the SCEs are *not* forecasts: they do not predict the financial consequences of candidate actions; rather, they provide a rough idea of their costs—costs for which we would have to compensate in other ways. Thus, despite their shortcomings, P&B believes that the SCEs usefully illustrate some of the financial constraints under which Bucknell operates. Moreover, acquaintance with the IFM is valuable in its own right; for example, it reveals how the University is managing some costly initiatives involving infrastructure improvement (including Academic East, the new Arts & Management building, and various renovations). In sum, then, we hope that the information below will enable community members to give better-informed and more incisive input when P&B begins work on Stage 2 of the report in Fall 2019.

The SCEs are presented in five-year tables as follows:

ACTION X — Simple Cost Estimate	FY21	FY22	FY23	FY24	FY25
IFM	($1,463)	($2,005)	($2,562)	($999)	($769)
IFM + ACTION X	$ (a)	$ (b)	$ (c)	$ (d)	$ (e)
Additional Revenue or (Expense)	$ (a – 1,463)	$ (b – 2,005)	$ (c – 2,562)	$ (d – 999)	$ (e – 769)

Note that all tables and graphs in Part 5 follow some Finance Office conventions. Unless otherwise indicated, all dollar values are in thousands; thus, '$1,000' in the table means "one million dollars." Moreover, values enclosed in parentheses '($)' are negative amounts. In the template table above, line labelled 'IFM' is Bucknell's projected annual net operating revenue or (expense) according to the IFM; the third line, '(IFM + ACTION)', is the projected annual net operating revenue or (expense) according to the IFM adjusted for the candidate action; and the fourth line is the difference, or the estimated annual cost of the candidate action (in the absence of any compensating action). In what follows, we first present and explain key features of the IFM and then turn to the four candidate actions:

- Action 1: Comprehensive Fee Restriction.
- Action 2: Financial Aid Discount Rate to 35% by 2025.
- Action 3: Financial Aid Discount Rate to 40% by 2025.
- Action 4: Flat Enrollment until 2025.

The Integrated Financial Model (IFM)

While a five-year SCE is sufficient to illustrate the financial impact of each candidate action, it is useful to consider the IFM projected over a 10-year period:

Bucknell University
Finance Office

INTEGRATED FINANCIAL MODEL (IFM) (in '000's)	FY18 Actual	FY19 Proj Actual	FY20 Apprvd Bgt	FY21 Proj Bgt	FY22 Proj Bgt	FY23 Proj Bgt	FY24 Proj Bgt	FY25 Proj Bgt	FY26 Proj Bgt	FY27 Proj Bgt	FY28 Proj Bgt	FY29 Proj Bgt	FY30 Proj Bgt
REVENUES													
NET TUITION & FEES	132,465	137,900	145,070	149,778	156,001	162,037	168,078	174,109	179,541	186,746	193,194	199,868	206,775
OTHER REVENUES	108,083	107,076	110,233	111,597	112,524	113,499	115,149	116,874	121,042	124,001	127,007	130,130	133,323
TOTAL REVENUES	$ 240,548	$ 244,976	$ 255,303	$ 261,375	$ 268,525	$ 275,536	$ 283,227	$ 290,983	$ 300,583	$ 310,747	$ 320,201	$ 329,998	$ 340,098
EXPENDITURES AND ALLOCATIONS													
COMPENSATION	148,653	153,105	157,257	161,242	166,315	171,741	177,381	183,154	189,284	195,434	201,905	208,461	215,383
OPERATING EXPENSES	92,600	91,900	98,046	101,596	104,215	106,357	106,845	108,598	110,343	112,191	114,099	116,096	118,319
TOTAL EXPENDITURES AND ALLOCATIONS	$ 241,253	$ 245,005	$ 255,303	$ 262,838	$ 270,530	$ 278,098	$ 284,226	$ 291,752	$ 299,627	$ 307,625	$ 316,004	$ 324,557	$ 333,702
NET OPERATING REVENUE/(EXPENSE)	$ (705)	$ (29)	$ -	$ (1,463)	$ (2,005)	$ (2,562)	$ (999)	$ (769)	$ 956	$ 3,122	$ 4,197	$ 5,441	$ 6,396

The IFM makes a variety of budgeting assumptions. For example, it assumes no increase in the discount rate beyond 31.5%, it increases undergraduate on-campus enrollment to 3,600 by 2027, and it increases the comprehensive fee by 3.5% per year. Further details—including some budget-line breakdowns and other key modeling assumptions—are available in Appendix A.

Notice that the IFM forecasts operating deficits in FY2021–25; these are largely a consequence of present and near-term initiatives involving infrastructure improvement. Crucially, these deficits are offset by projected operating surpluses in FY2026–30. Still, the actions the IFM assumes do little to constrain the cost of a Bucknell education and do not significantly improve our financial aid offerings; thus, they do little to address the question of competitiveness or the increasingly important social and ethical question of accessibility. Indeed, a likely consequence of the actions the IFM assumes would be a growing need to recruit and admit more full- and better-pay students and an increased burden of debt for other Bucknell graduates. This brings us to our first candidate action.

Action 1: Comprehensive Fee Restriction

Arguably, current increases in the cost of a Bucknell education are neither sustainable nor align with its mission "to serve the common good and to promote justice." Consider that the IFM assumes a 3.5% annual increase in comprehensive fee; at this rate, the annual cost of a Bucknell education will exceed $100k within 10 years. Somewhat arbitrarily, Action 1 imagines holding Bucknell's annual comprehensive fee increase to a rate that allows it to reach $100k in 20 rather than 10 years. The following table represents the estimated impact of Action 1 on Bucknell's bottom line through FY25:

ACTION 1 — Simple Cost Estimate	FY21	FY22	FY23	FY24	FY25
IFM	($1,463)	($2,005)	($2,562)	($999)	($769)
IFM + Comprehensive Fee Restriction	($4,793)	($8,875)	($13,166)	($15,534)	($19,427)
Additional Revenue or (Expense)	($3,330)	($6,870)	($10,604)	($14,535)	($18,658)

Clearly, Action 1 has a strong negative effect on Bucknell's finances, culminating in an estimated increased annual loss of $18.7 million in FY2025. On the plus side, the resulting rate of increase to the comprehensive fee (1.64%) is significantly below estimates of the annual inflation rate over this period. In this respect, Action 1 addresses the question of cost and competitiveness—albeit somewhat differently than a change to the discount rate (Actions 2 & 3). In terms of future recruitment, slowing the rate at which we increase the comprehensive fee might be a favorable talking point with critics disturbed by the fact that higher education costs have outstripped inflation for decades. At the same time, we should ask whether limiting costs in this way is as appealing—or as visible—to students and parents as an increase in the discount rate. This brings us to our next candidate action.

Action 2: Financial Aid Discount Rate to 35% by 2025

While the IFM assumes that the discount rate will not exceed 31.5%, the Strategic Plan includes an initiative to increase the financial aid discount rate to 35% by 2025. Assuming a linear annual increase, the following table represents the estimated impact of this action on Bucknell's bottom-line through FY25:

ACTION 2 — Simple Cost Estimate	FY21	FY22	FY23	FY24	FY25
IFM	($1,463)	($2,005)	($2,562)	($999)	($769)
IFM + 35% Discount Rate by FY25	($1,680)	($4,423)	($7,372)	($8,350)	($10,854)
Additional Revenue or (Expense)	($217)	($2,418)	($4,810)	($7,351)	($10,085)

According to this estimate, the total five-year cost of reaching a 35% discount rate by 2025 is over $24 million. From a financial perspective, this is a significant improvement over Action 1. However, even reaching a

35% discount rate by 2025 will still leave us well behind many of our competitors (Fig. 1). Thus, Action 3 asks: what if we were even more ambitious?

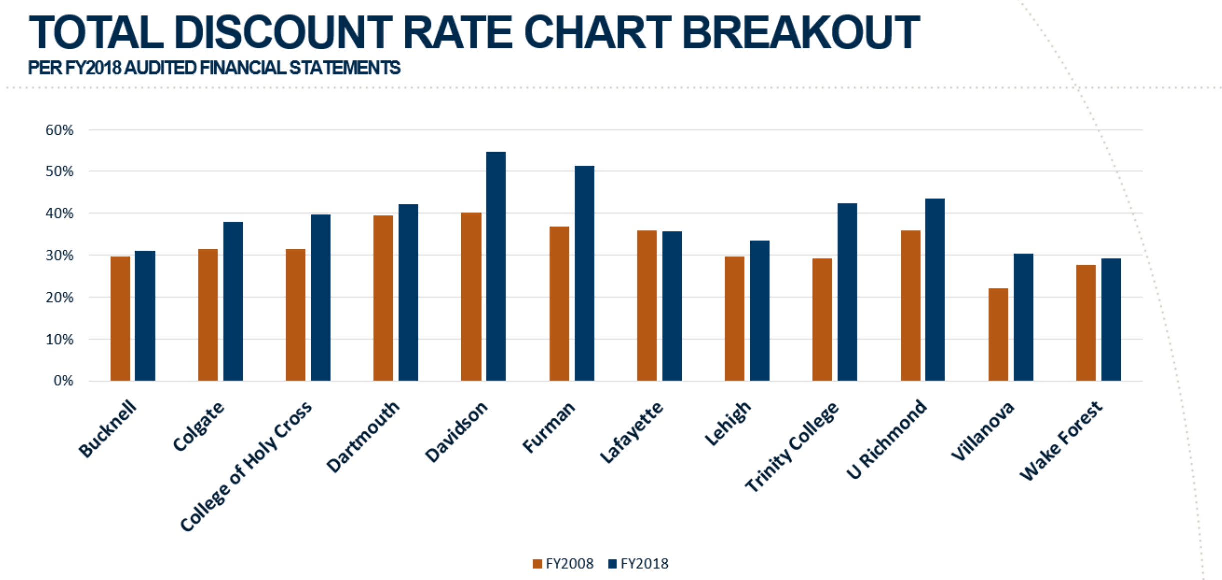

Figure 1.

Action 3: Financial Aid Discount Rate to 40% by 2025

To reach a discount rate of 40% by 2025 would position us closer to the current range of peer institutions. Such a significant increase to the discount rate will allow us to enroll better qualified students and potentially increase both retention and graduation rates. However, the financial burdens imposed by Action 3 are very significant, projected to cost $22 million in FY25 alone:

ACTION 3 — Simple Cost Estimate	FY21	FY22	FY23	FY24	FY25
IFM	($1,463)	($2,005)	($2,562)	($999)	($769)
IFM + 40% Discount Rate by FY25	($1,680)	($4,423)	($7,372)	($8,350)	($10,854)
Additional Revenue or (Expense)	($217)	($2,418)	($4,810)	($7,351)	($10,085)

Again, this table assumes a linear annual increase in the discount rate.

Action 4: Flat Enrollment until 2025.

The IFM assumes that the University's undergraduate on-campus enrollment will reach a Board-approved target of 3,600 by 2027. What if we instead keep it flat at 3,475? Since Bucknell's revenues are driven by tuition, enrollment is a significant financial variable. Estimating the cost of constant enrollment in this period demonstrates its relative importance:

ACTION 4 — Simple Cost Estimate	FY21	FY22	FY23	FY24	FY25
IFM	($1,463)	($2,005)	($2,562)	($999)	($769)

IFM + Flat Enrollment until 2025	($2,889)	($4,534)	($5,835)	($4,838)	($5,038)
Additional Revenue or (Expense)	($1,426)	($2,529)	($3,273)	($3,839)	($4,269)

While Action 4 has a smaller financial impact than Actions 1–3, its effects are hardly trivial. From the perspective of financial planning, this illustrates the value of growing the student body to offset the costs of highly desirable actions such as Actions 1–3.

In conclusion, Figure 2 illustrates the relative costs of Actions 1–4:

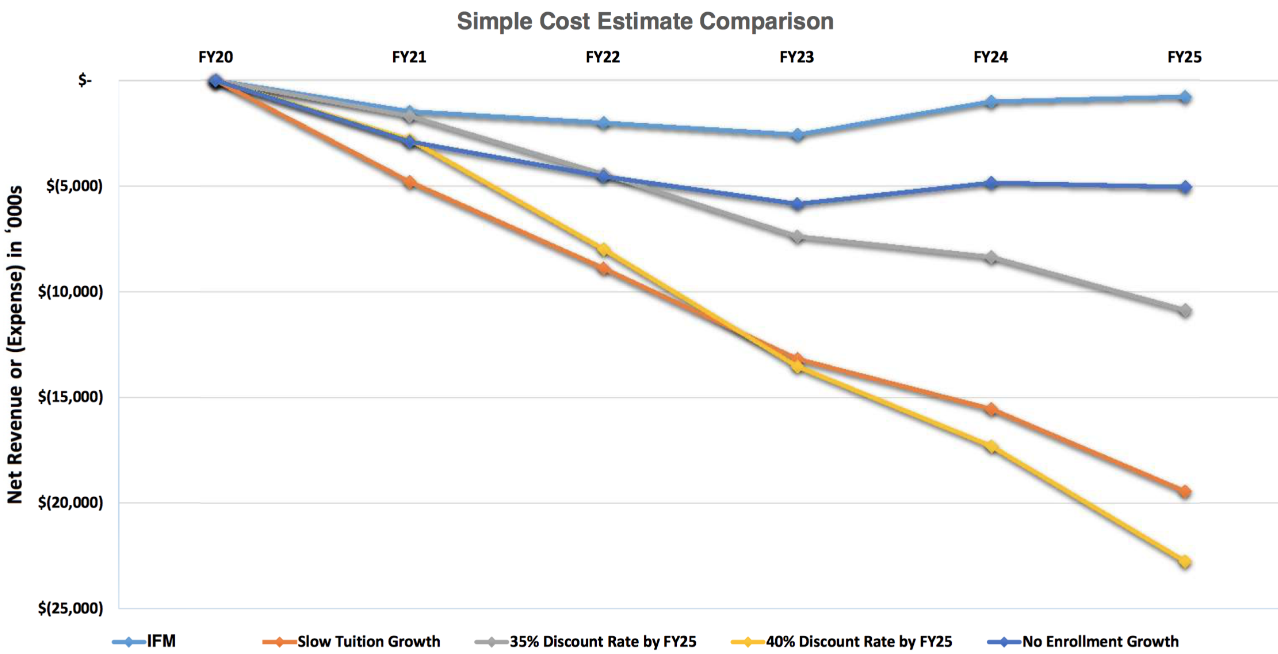

Figure 2.

Of course, there are many desirable actions whose costs we have not considered, including new Strategic Plan initiatives. Notably absent is any reflection on financial planning related to mitigating—and responding to the effects of—anthropogenic climate change. Nevertheless, we believe that our Simple Cost Estimates are sufficient to justify the conclusion that to achieve some of its core goals without running substantial deficits, the University must immediately undertake a detailed examination and unflinching assessment of its expenditures and consider possible new sources of revenue. To begin this process of collective self-reflection and exploration should arguably be the first step in developing Bucknell's Strategic Financial Plan (an initiative in the Strategic Plan). Moreover, P&B believes that this process can be neither replaced by nor postponed beyond the next comprehensive campaign. As the Strategic Plan notes, "a campaign alone cannot achieve the bold change the University seeks; doing so will require a combination of increased resources *and* reduced operating expenses."

6. Conclusion

This report shows that Bucknell—and American higher education generally—faces significant imminent challenges. Thus, P&B believes that, though we are not yet in a crisis, we must act to avert one in the future.

Indeed, as President Bravman has indicated, the question is not so much *whether* we will endure, but *how* we will endure. Who we become as a university depends on how we choose to invest our resources—predominantly money and time. As with many large-scale social challenges whose effects can be predicted but are not yet widely felt (think of climate change 10 years ago), it may be difficult to muster the will to act. But in such cases, inaction is a form of action. With respect to University finances, delays amount to choices with long-term effects on the order of decades. We are in the fortunate position of being able to predict some of the major challenges we will face in the next 5–10 years; but the longer we wait, the more difficult it will become to address them. Our ability to invest in the future depends on acting now in a way that is true to our institutional mission and identity. (For another P&B document that expresses similar sentiments, see the 2019–20 Comprehensive Fee and Compensation Recommendation Letter in Appendix B.)

This report might seem to have a negative or pessimistic tone. That is not our intent; rather, we have tried to be both realistic and restrained, and to lay out the facts as we currently understand them. We offer this report in the spirit of hope and cooperation. In our deliberations, P&B has come to realize that, while major constraints exist, many possible futures lie within our grasp. To choose among these futures is not the charge of our committee; this is a challenge for the entire University. Together, we must work to find a way to respond to some substantial financial pressures while remaining true to our mission and advancing institutional goals such as those included in the Strategic Plan.

We look forward to the second stage of this conversation.

Appendix A. The Integrated Financial Model

The Integrated Financial Model (IFM) is a complex model built on a variety of budgeting assumptions. As discussed in Part 5, the IFM assumes no increase in the discount rate beyond 31.5%, increases undergraduate on-campus enrollment to 3,600 by 2027, and increases comprehensive fee by 3.5% per year. The model also includes moderate growth assumptions for faculty and staff salaries, health insurance and other strategic expenses, including investment in capital projects. The following spreadsheet includes a bit more budget-line detail than the condensed version of the IFM that we present in Part 5. In addition, it lists some key assumptions for each year, such as rates of increase to faculty and staff salaries.

Integrated Financial Model (IFM)	FY18 Actual	% of total	FY19 Proj Actual	% of total	FY20 Apprvd Bgt	% of total	FY21 Proj Bgt	% of total	FY22 Proj Bgt	% of total	FY23 Proj Bgt	% of total	FY24 Proj Bgt	% of total
(in '000's)														
REVENUES														
TUITION & FEES	$ 191,917		$ 199,879		$ 208,743		$ 218,297		$ 227,316		$ 236,063		$ 244,818	
Less Financial Aid	(59,452)		(61,979)		(63,673)		(68,519)		(71,315)		(74,026)		(76,740)	
NET TUITION & FEES	132,465	55.1%	137,900	56.3%	145,070	56.8%	149,778	57.3%	156,001	58.1%	162,037	58.8%	168,078	59.3%
GRANTS & CONTRACT	4,234	1.8%	3,796	1.5%	3,796	1.5%	3,796	1.5%	3,796	1.4%	3,796	1.4%	3,796	1.3%
GIFTS & CONTRIBUTIONS	12,486	5.2%	12,040	4.9%	12,130	4.8%	12,133	4.6%	12,133	4.5%	12,133	4.4%	12,133	4.3%
NET INVESTMENT INCOME	44,355	18.4%	45,436	18.5%	46,014	18.0%	46,033	17.6%	45,570	17.0%	45,105	16.4%	45,264	16.0%
OTHER REVENUES	7,963	3.3%	6,000	2.4%	6,415	2.5%	6,383	2.4%	6,351	2.4%	6,319	2.3%	6,288	2.2%
AUXILIARY ENTERPRISES	39,045	16.2%	39,804	16.2%	41,878	16.4%	43,252	16.5%	44,674	16.6%	46,145	16.7%	47,668	16.8%
TOTAL REVENUES	**$ 240,548**		**$ 244,976**		**$ 255,303**		**$ 261,375**		**$ 268,524**		**$ 275,536**		**$ 283,227**	
EXPENDITURES AND ALLOCATIONS														
COMPENSATION	148,653	61.6%	153,105	62.5%	157,257	61.6%	161,242	61.3%	166,315	61.5%	171,741	61.8%	177,381	62.4%
OPERATING EXPENSES														
Purchased Services and Supplies	55,071	22.8%	57,401	23.4%	60,344	23.6%	61,333	23.3%	62,343	23.0%	63,376	22.8%	64,433	22.7%
Utilities	5,745	2.4%	5,476	2.2%	5,192	2.0%	5,348	2.0%	5,508	2.0%	5,673	2.0%	5,843	2.1%
Depreciation	22,713	9.4%	23,563	9.6%	24,600	9.6%	24,527	9.3%	22,949	8.5%	21,326	7.7%	20,196	7.1%
Interest	5,514	2.3%	5,460	2.2%	5,410	2.1%	5,361	2.0%	5,272	1.9%	5,201	1.9%	5,107	1.8%
TOTAL OPERATING EXPENSES	89,043	36.9%	91,900	37.5%	95,546	37.4%	96,569	36.7%	96,072	35.5%	95,576	34.4%	95,579	33.6%
TOTAL EXPENSES	**237,696**		**245,005**		**252,803**		**257,811**		**262,387**		**267,317**		**272,960**	
BUDGETED CONTINGENCY	-		-		2,500	1.0%	3,299	1.3%	3,399	1.3%	3,496	1.3%	3,600	1.3%
OTHER ACTIVITY/STRATEGIC INITIATIVES	3,557	1.5%	-		-		1,729	0.7%	4,744	1.7%	7,285	2.5%	7,666	2.7%
TOTAL EXPENDITURES AND ALLOCATIONS	**$ 241,253**		**$ 245,005**		**$ 255,303**		**$ 262,838**		**$ 270,530**		**$ 278,098**		**$ 284,226**	
NET OPERATING REVENUE/(EXPENSE)	**$ (705)**		**$ (29)**		**$ -**		**$ (1,463)**		**$ (2,005)**		**$ (2,562)**		**$ (999)**	
Key Assumptions														
Student Revenue:														
Undergraduate on campus enrollment			3,465		3,475		3,510		3,535		3,550		3,560	
Comprehensive fee rate increase			3.90%		3.75%		3.50%		3.50%		3.50%		3.50%	
Total financial aid discount rate			30.64%		30.50%		31.00%		31.00%		31.00%		31.00%	
Gifts & Investments:														
Unrestricted annual fund giving			4,000,000		4,000,000		4,000,000		4,000,000		4,000,000		4,000,000	
New annual gifts to the endowment			10,000,000		13,274,660		13,173,145		11,987,000		10,150,000		10,000,000	
Endowment policy spending cap			5.50%		5.50%		5.40%		5.30%		5.20%		5.10%	
Expenses:														
Faculty salaries			3.25%		2.50%		2.75%		2.75%		2.75%		2.75%	
Staff salaries			3.00%		2.50%		2.75%		2.75%		2.75%		2.75%	
Current employee healthcare			14.57%		5.04%		7.50%		7.50%		7.50%		7.50%	
Departmental expenses			1.00%		1.00%		1.00%		1.00%		1.00%		1.00%	
Budgeted contingency (% of gross revenue)			0.56%		1.00%		1.00%		1.00%		1.00%		1.00%	

Integrated Financial Model (IFM)	FY25 Proj Bgt	% of total	FY26 Proj Bgt	% of total	FY27 Proj Bgt	% of total	FY28 Proj Bgt	% of total	FY29 Proj Bgt	% of total	FY30 Proj Bgt	% of total
(in '000's)												
REVENUES												
TUITION & FEES	$ 253,559		$ 263,329		$ 273,848		$ 283,261		$ 293,004		$ 303,087	
Less Financial Aid	(79,450)		(83,788)		(87,102)		(90,067)		(93,136)		(96,312)	
NET TUITION & FEES	174,109	59.8%	179,541	59.7%	186,746	60.1%	193,194	60.3%	199,868	60.6%	206,775	60.8%
GRANTS & CONTRACT	3,796	1.3%	3,796	1.3%	3,796	1.2%	3,796	1.2%	3,796	1.2%	3,796	1.1%
GIFTS & CONTRIBUTIONS	12,133	4.2%	12,133	4.0%	12,133	3.9%	12,133	3.8%	12,133	3.7%	12,133	3.6%
NET INVESTMENT INCOME	45,444	15.6%	48,011	16.0%	49,313	15.9%	50,601	15.8%	51,947	15.7%	53,298	15.7%
OTHER REVENUES	6,256	2.1%	6,225	2.1%	6,194	2.0%	6,163	1.9%	6,132	1.9%	6,101	1.8%
AUXILIARY ENTERPRISES	49,245	16.9%	50,877	16.9%	52,565	16.9%	54,314	17.0%	56,122	17.0%	57,995	17.1%
TOTAL REVENUES	**$ 290,983**		**$ 300,583**		**$ 310,747**		**$ 320,201**		**$ 329,998**		**$ 340,098**	
EXPENDITURES AND ALLOCATIONS												
COMPENSATION	183,154	62.8%	189,284	63.2%	195,434	63.5%	201,905	63.9%	208,461	64.2%	215,383	64.5%
OPERATING EXPENSES												
Purchased Services and Supplies	65,513	22.5%	66,618	22.2%	67,748	22.0%	68,904	21.8%	70,086	21.6%	71,296	21.4%
Utilities	6,018	2.1%	6,199	2.1%	6,385	2.1%	6,576	2.1%	6,774	2.1%	6,977	2.1%
Depreciation	19,542	6.7%	18,800	6.3%	17,934	5.8%	17,058	5.4%	16,334	5.0%	15,797	4.7%
Interest	5,001	1.7%	4,885	1.6%	4,845	1.6%	4,845	1.5%	4,845	1.5%	4,845	1.5%
TOTAL OPERATING EXPENSES	96,074	32.9%	96,502	32.2%	96,912	31.5%	97,383	30.8%	98,039	30.2%	98,915	29.6%
TOTAL EXPENSES	**279,228**		**285,786**		**292,346**		**299,288**		**306,500**		**314,298**	
BUDGETED CONTINGENCY	3,704	1.3%	3,844	1.3%	3,978	1.3%	4,103	1.3%	4,231	1.3%	4,364	1.3%
OTHER ACTIVITY/STRATEGIC INITIATIVES	8,820	3.0%	9,997	3.3%	11,301	3.7%	12,613	4.0%	13,826	4.3%	15,040	4.5%
TOTAL EXPENDITURES AND ALLOCATIONS	**$ 291,752**		**$ 299,627**		**$ 307,625**		**$ 316,004**		**$ 324,557**		**$ 333,702**	
NET OPERATING REVENUE/(EXPENSE)	**$ (769)**		**$ 956**		**$ 3,122**		**$ 4,197**		**$ 5,441**		**$ 6,396**	
Key Assumptions												
Student Revenue:												
Undergraduate on campus enrollment	3,565		3,580		3,600		3,600		3,600		3,600	
Comprehensive fee rate increase	3.50%		3.50%		3.50%		3.50%		3.50%		3.50%	
Total financial aid discount rate	31.00%		31.50%		31.50%		31.50%		31.50%		31.50%	
Gifts & Investments:												
Unrestricted annual fund giving	4,000,000		4,000,000		4,000,000		4,000,000		4,000,000		4,000,000	
New annual gifts to the endowment	40,000,000		10,000,000		10,000,000		10,000,000		10,000,000		10,000,000	
Endowment policy spending cap	5.00%		5.00%		5.00%		5.00%		5.00%		5.00%	
Expenses:												
Faculty salaries	2.75%		2.75%		2.75%		2.75%		2.75%		2.75%	
Staff salaries	2.75%		2.75%		2.75%		2.75%		2.75%		2.75%	
Current employee healthcare	7.50%		7.50%		7.50%		7.50%		7.50%		7.50%	
Departmental expenses	1.00%		1.00%		1.00%		1.00%		1.00%		1.00%	
Budgeted contingency (% of gross revenue)	1.00%		1.00%		1.00%		1.00%		1.00%		1.00%	

Appendix B. Additional 2018–19 P&B Documents

For completeness, we include two documents that P&B produced as part of its normal work during AY2018–19 and that are directly relevant to the content of this report.

First, in Fall 2018, P&B delivered a report to the Faculty on retiree healthcare. This report is available here.

Second, in January 2019, P&B submitted to the President and the Board its annual recommendation letter on changes to comprehensive fee and faculty and staff compensation. This letter is available here.

Appendix C. The *Finance 101* Presentation

As part of the recent strategic planning process, Vice President for Finance & Administration Dave Surgala held an open forum on University finances. (A video recording of the full event is available here.) At the same time, the Finance Office shared its illuminating *Finance 101* presentation, and an updated version based on FY2018 data is now available here.

While there is significant overlap between the content of *Finance 101* and certain parts of this report, they are in other ways complementary. Most significantly, this report focuses on the present and the future, but *Finance 101* is primarily retrospective. In addition, *Finance 101* provides more information about the student body, the history of compensation and financial aid discount rates, the categories in the operating budget, and Bucknell's endowment investments. We recommend reading both.