

UNIVERSITY OF DELAWARE BUDGET MODEL

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1 EXECUTIVE SUMMARY

In December 2017, President Dennis Assanis charged the University of Delaware's (UD's) Budget Model Steering Committee with developing a new University budget model. The committee, composed of faculty and staff organized into four topic-specific subcommittees, made recommendations that led to the development of the UD budget model, which launched Phase 1 in the fiscal year (FY) 2020 budget cycle. The timeline of the budget model development, including campus constituent consultation, is available in **Section 6, Next Steps**. The development of proposals and subsequent modeling for the committees took place in 2018-19, leading to the development of our initial model, which was presented in multiple forums before implementation for FY2020. During the first year of implementation, UD adjusted the methodology to simplify the model and increase efficiency, and implemented additional enhancements after a mini-retreat with the Deans and Provost in FY2021. During winter of FY2021, additional review of the metrics and methodology was undertaken in partnership with the Deans and the Provost that led to further fine-tuning of the model.

UD's goal is to create a budget model that is consistent with the University's values and mission and that allows all levels of leadership to participate in and advance UD priorities. The budget model needs to support the institutional mission by aligning resources with priorities. The UD budget model functions within a hybrid system of responsibility-centered budgeting, incremental budgeting, and centralized budgeting. This mix of budgeting allows the University's leadership to clearly see the fiscal implications of activities at the school/college/research unit level, while allowing considerable flexibility to set priorities and adjust to fiscal circumstances considering the University's missions.

In turn, the budget system is a part of the financial structure of the University (**Appendix A**). The purpose of this paper is to describe the designed budget model (referred to as the UD budget model), budget system, and overall financial structure of the University. We will focus primarily on the academic budget model for "activity-based" or revenue-generating units (departments, colleges, research institutes and centers), although budgeting for academic support and administrative units will also be described.

The primary objectives of the UD budget model are as follows:

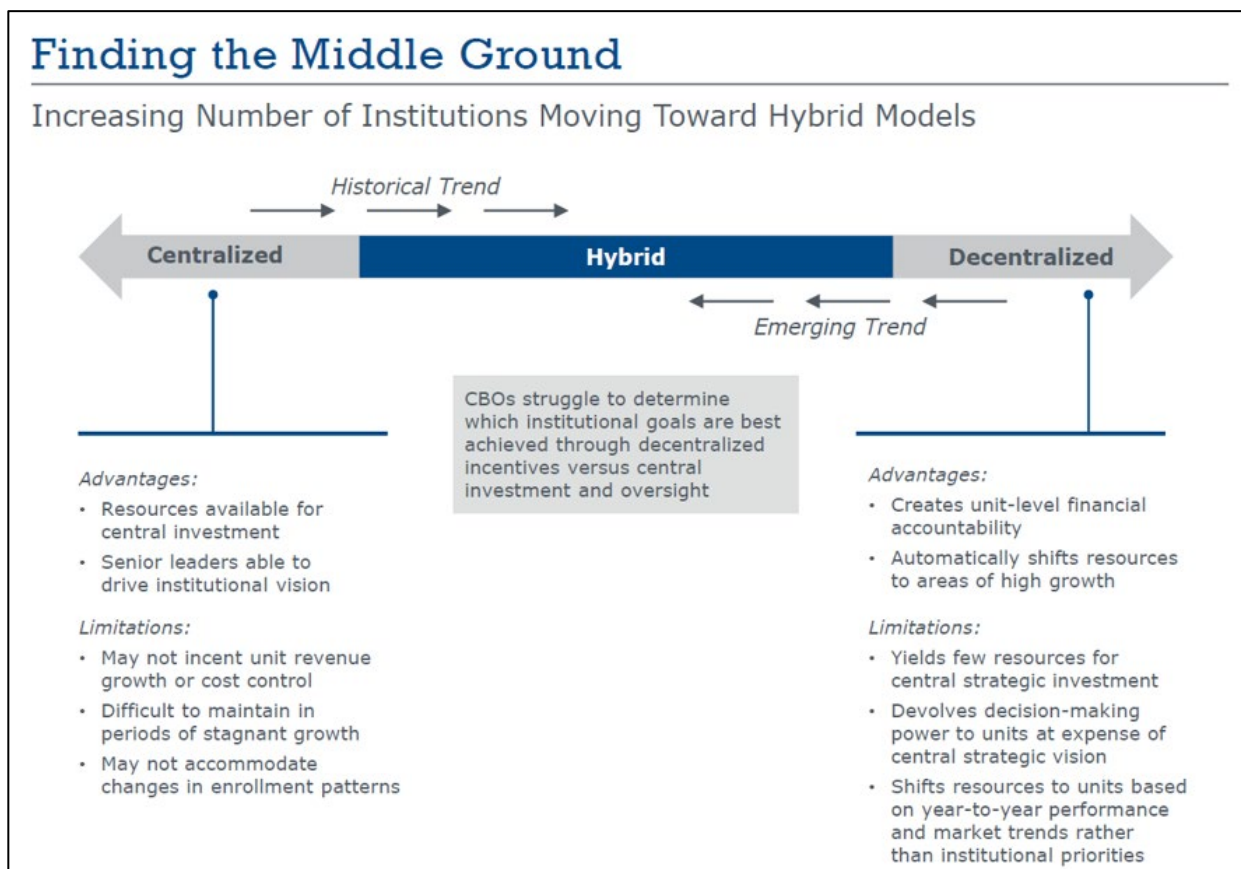
- Create incentives across revenue types that promote responsible program growth, financial sustainability, fiscal responsibility, innovation, and entrepreneurship balanced with increasing academic excellence while providing transparency, clarity, and predictability at all levels.
- Create sufficient and co-dependent incentives at the different organizational levels (college, department, institute, principal investigator) that engage all units in collaborative pursuit of activities that align with University-wide priorities.
- Create sufficient strategic/central resources to fund University-wide priorities as well as provide startup funding to interdisciplinary and cross-college initiatives, and support overhead costs.
- Provide flexibility to respond to threats and opportunities and support retention of prudent cash reserves while incentivizing continued renewal of facilities and investment in students, faculty, and staff.

UD's operating budget is generated from a variety of sources (**Appendix B**), including tuition and fees, state and federal appropriations, sponsored-award funding, philanthropy, auxiliary revenue, and Facilities and Administrative (F&A) cost recoveries. UD classifies these resources into four categories: (1) General Operating Funds (restricted and unrestricted), (2) Endowment Funds, (3) Plant Funds, and (4) Fund

Balances/Reserve Funds. General Operating Funds, particularly those that are unrestricted and can be used for any University purpose, are the main component of the UD budget model. The budget model formulaically allocates revenue associated with tuition and fees and F&A. All other sources flow directly to the unit that generates them.

In the past, UD has distributed its resources through several budget models (**Appendix C**), similar to peer institutions, from centralized and block budgeting to a responsibility-centered budget model, which was in place when President Assanis joined UD in mid-2016. Concerns were raised at that time that an activity-based model was no longer meeting the University’s needs, and that the model would be insufficient to achieve strategic priorities because it favored a more decentralized approach, and it limited available resources for University-wide support services and strategic initiatives. Other institutions also included some form of incentive at levels lower than the colleges, even at the faculty level, and it was determined that UD should explore these options.

Figure 1.1. Movement toward a hybrid budgeting model.



Source: EAB (2016).
 CBOs = college business officers.

Many institutions are moving toward a hybrid budget model meant to create unit-level financial accountability, preserve University-wide mission-critical activities, and incorporate institutional strategic goals (EAB 2016). Figure 1.1 illustrates this movement as well as the advantages and disadvantages of centralized and decentralized budget models. Thirty peer institutions were analyzed for this paper to identify common strategies for structuring revenue cost allocations, subvention, and strategic reserves (Appendix D).

UD's current budget model functions as a hybrid system of responsibility-centered budgeting, incremental budgeting, and centralized (i.e., initiative) budgeting models. As shown in Figure 1.2, this budget model incorporates predictable base funding, formulaic returns of incremental revenue generated above the FY2017 base, of which a portion is allocated to fund academic support units' contractual obligations, and differential fees. The model has been launched in two phases (see Figure 1.2 below), with the eventual phase being defined by clear metrics that allow direct formulaic allocations at the department/unit level.

Figure 1.2.a. Summary of UD's budget model in its initial phase

Predictable Base	Formulaic Fund Allocations (Based on Metrics)				Contractual Obligation Fund	Differential Fees
	Undergraduate Incremental Revenue	Graduate Incremental Revenue	Special Sessions Revenue	F&A Incremental Revenue		
Fiscal Year 2017 Actuals	<i>Allocation</i> <ul style="list-style-type: none"> Student head count by major (25%) IDOR (75%) <i>Distribution</i> <ul style="list-style-type: none"> College (50%) Contractual Obligation Fund (50%) 	<i>Allocation</i> <ul style="list-style-type: none"> IDOR (50%) Subject by course ownership (50%) <i>Distribution</i> <ul style="list-style-type: none"> College (50%) Contractual Obligation Fund (50%) 	<i>Allocation</i> <ul style="list-style-type: none"> IDOR (100%) <i>Distribution</i> <ul style="list-style-type: none"> College (50%) Contractual Obligation Fund (50%) 	<i>Distribution</i> <ul style="list-style-type: none"> Principal investigators (5%) Remaining 95% distributed to: <ul style="list-style-type: none"> college/dept. (38%/9.5% respectively) OR UD-wide institute (47.5%) arts/humanities (2%) Contractual Obligation Fund (45.5%) 	Combination of formulaic allocation and one-time cash reserves	Will be fully implemented in FY 2021 Distributed 100% to the college

F&A = Facilities and Administrative; FY = fiscal year; IDOR = instructor department of record.

Figure 1.2.b. Summary of UD's budget model in its eventual phase

Predictable Base	Formulaic Fund Allocations (Based on Metrics)				Contractual Obligation Fund	Differential Fees
	Undergraduate Incremental Revenue	Graduate Incremental Revenue	Special Sessions Revenue	F&A Incremental Revenue		
Fiscal Year 2017 Actuals	<i>Allocation</i> <ul style="list-style-type: none"> Student head count by major (25%) IDOR (75%) <i>Distribution</i> <ul style="list-style-type: none"> College (50%) Contractual Obligation Fund (50%) 	<i>Allocation</i> <ul style="list-style-type: none"> IDOR (50%) Subject by course ownership (50%) <i>Distribution</i> <ul style="list-style-type: none"> College (25%) Department (12.5%) Program (12.5%) Contractual Obligation Fund (50%) 	<i>Allocation</i> <ul style="list-style-type: none"> IDOR (100%) <i>Distribution</i> <ul style="list-style-type: none"> College (25%) Department (25%) Contractual Obligation Fund (50%) 	<i>Distribution</i> <ul style="list-style-type: none"> Principal investigators (5%) Remaining 95% distributed to: <ul style="list-style-type: none"> college/dept. (38%/9.5% respectively) OR UD-wide institute (47.5%) arts/humanities (2%) Contractual Obligation Fund (45.5%) 	Combination of formulaic allocation and one-time cash reserves	Will be fully implemented in FY 2021 Distributed 100% to the college

F&A = Facilities and Administrative; FY = fiscal year; IDOR = instructor department of record.

- *Predictable Base:* The predictable base, which equals FY2017 expenditures, is an annual allocation of guaranteed funds meant to support both academic and administrative functions.
- *Formulaic Fund Allocations (Based on Metrics):* The formulaic fund allocation includes undergraduate incremental revenue, graduate incremental revenue, other academic revenue, and F&A revenue. With regard to formulaic fund allocations, the model will be launched in two phases. In the first phase (initial), incremental revenues have been split between colleges (50%) and the contractual obligation fund (50%), with allocations to departments/units being at the discretion of deans based on performance and relative impact on incremental revenue, offset by expenses. In the second phase (eventual), the intent is to have both incremental revenue and all appropriate expenses understood and allocated formulaically at department/unit levels. These formulaic allocations require accurate base budget determinations as well as profit and loss information at the department/unit level, which at this time is not readily available but which is a very high priority for UD.
 - *Undergraduate incremental revenue:* This revenue includes gross fall/spring tuition funding (net of financial aid) collected from undergraduate students enrolled in courses (including online courses). This revenue is calculated at the total University level and equals total University undergraduate revenue for a given year minus total University undergraduate revenue in FY2017 (each net of financial aid). Funds are allocated based on student head count by major (25%) and instructor department of record (IDOR) (75%). Undergraduate incremental revenue is distributed equally between colleges (50%) and the contractual obligation fund (50%).
 - *Graduate incremental revenue:* This revenue includes gross Ph.D. and master's program tuition collected from graduate students enrolled in courses (including online courses). Unlike undergraduate incremental revenue, graduate incremental revenue is calculated at the college-level and equals the college's actual graduate tuition revenue for a given year minus the actual graduate tuition revenue in FY2017. Funds are allocated based on IDOR (50%) and subject by course ownership (50%). Initially, as the model is launched, graduate incremental revenue is distributed between colleges (50%) and the contractual obligation fund (50%) with the understanding that eventually the college distribution will be divided among the college (25%), relevant departments (12.5%) and relevant programs (12.5%).
 - *Special Sessions revenue:* This revenue includes tuition collected from credit-bearing, undergraduate programs (including online courses) in winter and summer sessions. 100% of in-year revenues, rather than incremental revenues, are allocated based entirely on IDOR (100%) to incentivize production of high-quality, high-demand course offerings in winter and summer. Initially, as the model is launched, special sessions revenue is distributed between colleges (50%) and the contractual obligation fund (50%), with the understanding that eventually the college distribution will be shared between the college (25%) and the departments (25%).
 - *F&A incremental revenue:* This revenue comprises reimbursements for allowable research expenses, is calculated at the University level, and equals total University F&A revenue for a given year minus total University F&A in FY2017. Five percent of incremental F&A revenue is distributed among all UD principal investigators (PIs) based on their relative contributions to the total F&A revenue (not incremental F&A revenue) generated that year. The remaining F&A revenue is distributed at varying levels among colleges, departments, institutes, and contractual obligation fund, including an allocation to support Arts & Humanities.

- *Contractual obligation fund:* Honors and Graduate colleges, as well as both academic and non-academic support units' contractual obligations are funded through a 50% distribution of each of UD's *incremental/formulaic* revenue sources (i.e., undergraduate tuition, graduate tuition, sponsored activities, and special sessions). UD retains these funds centrally to allow a reasonable formulaic allocation to cover increases since FY2017 in compensation, technology, compliance, equipment, debt repayment, deferred maintenance and infrastructure. **Currently, 50% of UD's incremental/formulaic revenue is not sufficient to cover incremental contractual costs (merit, fringe, debt repayment or infrastructure) incurred since FY2017; therefore, existing fund balances are being used as bridge funding until incremental revenue increases.** As colleges increase incremental revenue and contractual obligations are able to be fully funded, any remaining contractual obligation resources will be set aside to fund new strategic initiatives for both academic and non-academic units, including one-time costs and/or startup costs of new ventures that are not yet revenue-generating or self-supporting, including cross-college initiatives. These allocation decisions must incorporate the entire set of University needs and explicitly weigh the trade-offs between academic and support priorities. This does not apply to the eight revenue-generating colleges.
- *Differential fees:* First implemented in FY2019 in three UD colleges, differential fees were phased in over three years and were fully implemented in FY2021. Differential and course fees are distributed 100% to the college. As part of UD's commitment to affordability, students enrolled in summer and winter sessions are not charged differential fees.

The UD budget model impacts colleges, departments, centers within colleges, and University-wide research institutes. UD expects budget realignment to continue at both the college and department levels as all stakeholders adjust to changing resource flows. Additionally, to address the possibility that the model introduces inequities or adverse incentives, new processes (e.g., detailed financial statements for each department/unit/Institute) will ensure transparency and accountability at all levels.

We will continue to monitor the model to look for early indicators of success, including:

- Stakeholders' understanding of the budget model and how it applies to them and advances the institution.
- Clear reports of metrics and allocation of revenue distributed at regular intervals to facilitate planning.
- Allocation of revenue according to the distribution percentages using verifiable, institutionally approved data.
- Accurate cost accounting of academic programs at department levels.

Continued indicators of success include increases in institutional revenue to cover annual recurring investments and increases in interdisciplinary program revenue generation, while ensuring progress in metrics of student success such as retention and graduation rates, as well as progress in inclusive excellence. The model will be periodically reviewed over time to evaluate indicators of success, avoid unintended consequences, and ensure that the model and its incentive structures remain relevant. UD's goal is to maintain a budget model that is consistent with its values and mission and that allows all levels of leadership to participate in and advance UD's priorities.

2 UNIVERSITY OF DELAWARE BUDGET MODEL: INITIAL YEAR PHASE 1

The UD budget model process for colleges starts with a predictable base budget, established as FY2017 actuals. Non-college base budgets are aligned each fiscal year using a zero-base budget approach that annualizes recurring expenses into the budget while assigning one-time expenses to one-time resources.

The incremental revenue sources budgeted within this model (i.e., undergraduate tuition, graduate tuition, sponsored activities, and 100% of special sessions revenue) are then allocated among the colleges based on metrics, such as student head count, IDOR, and subject (i.e., major). Although the incremental revenue budgeted by the UD budget model is largely activity-based, allocations of that revenue are made both on the basis of activity and strategy. For example, a college that brings in a new research grant or enrolls more graduate students in its courses earns college credit for that additional income. A portion of graduate tuition and F&A revenue from grants is allocated directly to the college, which then allocates funding to the department. These allocation efforts are considered the “activity-based” portion of the budget model, an important aspect to encourage entrepreneurial activity within and between departments.

In addition to the activity-based allocations to colleges and departments, and after college support units’ contractual obligations are fully funded by 50% of incremental/formulaic resources, any remaining funding will be strategically reinvested into the University. These remaining resources allow the president and provost flexibility to allocate funding in ways that are not strictly formulaic, while also providing funds to support cost increases associated with units that are not activity-based or revenue generating. The model provides quantitative data on the number of students taught and amount of tuition and F&A revenue generated. Based on these data, the president and provost can determine how to allocate remaining funds. While formulaic allocations reward revenue-generation success, review of metrics such as class sizes, student-to-faculty ratios, and other discipline-specific metrics must be considered in allocation decisions to ensure that strategic plan goals are reached.

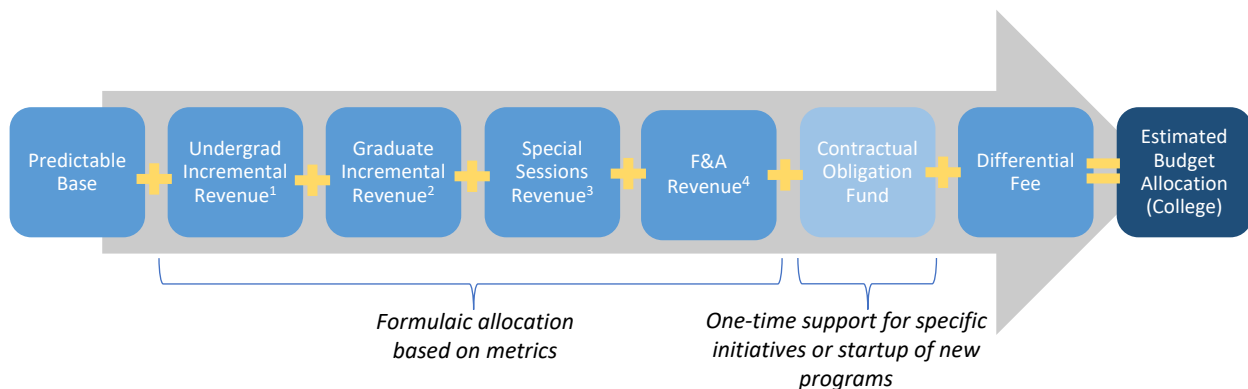
Success in meeting the goals of the University strategic plan, as well as department and college plans, will inform further revisions to the budget model. Before considering revisions, though, the University needs to operate under this budget model for a couple of years and develop a clear understanding of its strengths, weaknesses and actual impact. Also, the University’s finances need to stabilize from the effects of the COVID-19 pandemic, which created unprecedented challenges to both revenues and expenditures. As the University begins to recover financially, the budget model will be reviewed periodically in consultation with the president, provost, deans and VP’s, as well as the Faculty Senate Budget Committee and Chairs Caucus. The findings from these reviews will be presented to the president, provost, and deans, along with recommendations on possible revisions to the budget model to continue achieving University-wide objectives, academic unit goals and financial sustainability.

The UD budget model will be automated to ensure transparent and consistent metrics data are available campus-wide. This transparency fosters accountability when making strategic distributions and should empower deans and departments to make better cases for receiving additional funds, which will become available after college support units’ contractual obligations are fully funded. The intention is that the incentives and transparency will encourage department chairs and individual faculty members to increase revenue, while the metrics data will allow for formulaic allocation of funds. In this way, the hybrid model incentivizes growth and excellence.

2.1 UNIVERSITY OF DELAWARE BUDGET MODEL FORMULA

The UD budget model formula (Figure 3.1-1) begins with a predictable base allocation. Then, incremental revenue is distributed based on metrics set by the president, provost, and deans at the beginning of the fiscal year. The revenue is then shared based on the predetermined percentages in the distribution matrix in Figure 3.1-2.

Figure 2.1-1. UD budget model formula.



¹Undergraduate incremental revenue is pooled, and calculated net of financial aid.

²Graduate incremental revenue is attributed to the college, not pooled, and calculated as gross revenue, utilizing Board of Trustee approved tuition rates; additional discounting of revenue by colleges and departments is attributed to the unit, and graduate tuition expenses are transacted at the department level.

³Includes revenue from credit bearing courses in summer and winter sessions.

⁴F&A = Facilities and Administrative costs.

Note: The differential fee is returned 100% to the college. Gifts and self-supporting (2-book) revenue are excluded from the model.

As illustrated in Figure 3.1-1, the UD budget model formula consists of a predictable base allocation of funds, formulaic funds allocation based on metrics, contractual obligation funds, and differential fees.

The following is a breakdown of budget categories and the types of resources and funds associated with each:

- *Predictable Base.* Each college will receive a predictable base allocation of general funds meant to support both academic and administrative functions. Predictable base budgets at the college level are set equal to FY2017 actuals. Colleges will review department/center base budgets to ensure expenses reside at the appropriate level. Department/center base budgets should be adjusted to ensure they are set appropriately and reflect expectations regarding costs of instruction and ability to generate external revenue. It is recognized that inefficiencies are embedded into the predictable base; however, it is anticipated that a periodic review of expenses at the department/center level should occur to allow reallocation within the units to support strategic initiatives. Incremental revenue will be allocated with the expectation that expenses are being transacted appropriately at each college and department/center level, resulting in a net distribution of resources.
- *Formulaic Funds Allocation (based on metrics).* The formulaic funds allocation includes (1) undergraduate incremental revenue, (2) graduate incremental revenue, (3) other academic revenue, and (4) F&A revenue.

Figure 2.1-2. Funding allocation matrix in its initial phase

Factor	Incremental			Total		
	Undergraduate Incremental Revenue ¹	Graduate Incremental Revenue ²	Incremental F&A ⁴	Special Sessions Revenue (Winter/Summer Sessions)	Differential Fee	Course Fee
Metrics						
Student Head Count by Major	25%					
Instructor Department of Record—Taught	75%	50%		100%		
Subject by Course Ownership		50%				
Distribution						
College	50%	50%	38%	50%	100%	100%
Department	0% ³		9.5%			
Program						
Institutes			47.5%			
Principal Investigators			5%			
Arts & Humanities			2%			
Contractual Obligation Fund	50%	50%	45.5%	50%		

¹Undergraduate Incremental Revenue is calculated net of financial aid.

²Graduate Incremental Revenue is calculated as gross revenue and does not include graduate tuition expenses, which are transacted at the department level.

³Undergraduate Incremental Revenue will not be formulaically distributed to departments; however, metric report results are to be shared with each department.

⁴47.5% of incremental F&A will be allocated to either colleges/departments or to University-wide institutes depending on the source of the F&A.

(1) *Undergraduate incremental revenue*: This revenue is defined as fall/spring tuition collected from students enrolled in courses, including online courses. Winter and summer undergraduate tuition is excluded because it is considered the “special sessions revenue” portion of the UD budget model. Undergraduate incremental revenue is calculated at the total University level rather than by college and equals total University undergraduate revenue in a given year minus the total University undergraduate revenue in FY2017, net of financial aid. Undergraduate incremental revenue is allocated among colleges based on the metrics shown in Figure 3.1-2. See Appendix F for more detail about these metrics.

Incremental net undergraduate revenue will be separated into two components: (1) incremental revenue derived from *growth* in enrollment and student credit hours (SCH) and (2) incremental revenue derived from University-wide increases in tuition and fees (*inflation* component). In both cases, negative incremental revenues (FY2017 through FY2020) will be 100% allocated to the colleges that generated them. Colleges that do not grow undergraduate numbers or SCH taught will still receive an allocation derived from increases in tuition and fees for all students. Departments do not receive a direct allocation through the model; however, metric reporting is made available to them to

review the results. Colleges can use these metrics to inform distributions to departments. Refer to Figure 3.1-3 for an example of growth in enrollment and SCH for FY2017 through FY2020.

Figure 2.1-3. Growth in enrollment and credit hours by college for FY2017 through FY2020.

Undergraduate Growth in Enrollment				
Enrollment*	FY17 Enrollment (Fall/Spring Avg)	FY20 Enrollment (Fall/Spring Avg)	FY17 - FY20 Chg. In Enrollment	% of total Chg. in Enrollment
CANR	709.8	809.9	100.1	14.1%
CAS	5,543.2	5,724.4	181.2	3.3%
LCBE	3,128.0	3,125.5	(2.5)	-0.1%
COE	2,184.8	2,241.0	56.2	2.6%
CEOE	359.9	352.8	(7.0)	-2.0%
CHS	2,274.0	2,530.4	256.4	11.3%
CEHD	863.0	871.8	8.8	1.0%
Research Institutes	-	-	-	0.0%
ProvostOfc	-	0.9	0.9	0.0%
UST	1,216.8	1,053.3	(163.5)	-13.4%
Total	16,279.5	16,710.0	430.5	2.6%

Undergraduate Growth in Credit Hours				
IDOR Credit Hours*	FY17 (Fall/Spring Avg)	FY20 (Fall/Spring Avg)	FY17 - FY20 Chg. in IDOR	% of total Chg. in IDOR
CANR	10,836.5	13,913.9	3,077.5	28.4%
CAS	130,645.5	128,725.9	(1,919.5)	-1.5%
LCBE	40,563.8	41,047.5	483.8	1.2%
COE	18,784.3	19,494.3	710.0	3.8%
CEOE	6,630.8	7,406.2	775.4	11.7%
CHS	26,638.8	29,306.0	2,667.3	10.0%
CEHD	13,717.0	14,125.3	408.3	3.0%
Research Institutes	-	-	-	0.0%
ProvostOfc	-	-	-	0.0%
UST	409.0	971.0	562.0	137.4%
Total	248,225.5	254,990.0	6,764.5	2.7%

*Source: https://vger.udel.edu/#/views/UDBMMetricswithparameters_15956216731740/UGRDMetrics?iid=2.

Incremental net undergraduate revenue is distributed as follows:

- For the component of net incremental undergraduate revenue derived from growth in enrollment and SCH, 50% is distributed to fund college support unit contractual obligations and 50% is distributed to the colleges based on key metrics, except in cases of negative incremental revenues for which the allocation (decrease) is 100% to the colleges that generated them. The following are the noted key metrics:

- 75% of the incremental college distribution is based on IDOR.
 - 25% is allocated based on student head count (i.e., major).
 - Net incremental undergraduate revenue derived from University-wide increases in tuition and fees (inflation component) is allocated based on the college's percentage of total IDOR (75%) and student head count (25%).
- (2) *Graduate incremental revenue*: This revenue is defined as classroom and online gross Ph.D. and master's program tuition in a given year minus classroom and online gross Ph.D. and master's program tuition in FY2017.

Unlike undergraduate incremental revenue, which is calculated at the University level, each college's graduate incremental tuition is calculated separately. Incremental revenue is based on SCH (not head count) and allocated equally between IDOR and subject to account for interdisciplinary activity at the program level (see Figure 2.1-4 below). Similar to all other revenue sources, half of the incremental revenue generated will flow to the college support unit's contractual obligation fund and half will flow to the deans who make department incremental revenue allocation recommendations.

Figure 2.1-4. Growth in graduate credit hours and subject by college for FY2017 through FY2020.

Graduate Growth in Credit Hours				
IDOR Credit Hours	FY17	FY20	FY17-FY20 Chg. in IDOR	% of total Chg. in IDOR
CANR	3,210.0	3,503.0	293.0	9.1%
CAS	16,385.0	15,421.0	(964.0)	-5.9%
LCBE	9,495.0	13,369.0	3,874.0	40.8%
COE	9,863.0	10,699.0	836.0	8.5%
CEOE	1,989.0	2,153.0	164.0	8.2%
CHS	11,270.0	11,826.0	556.0	4.9%
CEHD	4,356.0	5,640.0	1,284.0	29.5%
Research Institutes	-	-	-	0.0%
Interdisciplinary	3.0	-	(3.0)	0.0%
Total	56,571.0	62,611.0	6,040.0	10.7%

Graduate Subject				
Subject	FY17	FY20	FY17-FY20 Chg. in Subject	% of total Chg. in Subject
CANR	3,000.0	3,458.0	458.0	15.3%
CAS	16,541.0	15,630.0	(911.0)	-5.5%
LCBE	9,511.0	13,366.0	3,855.0	40.5%
COE	9,810.0	10,601.0	791.0	8.1%
CEOE	1,899.0	2,028.0	129.0	6.8%
CHS	10,834.0	11,435.0	601.0	5.5%
CEHD	4,570.0	5,705.0	1,135.0	24.8%
Research Institutes	-	-	-	0.0%
Interdisciplinary	405.0	388.0	(17.0)	-4.2%
Total	56,571.0	62,611.0	6,040.0	10.7%

(3) *Special sessions revenue*: This revenue is defined as tuition collected from credit-bearing undergraduate courses and programs, including those taught online, in winter and summer sessions. To aggressively incentivize the production of high-quality, high-demand course offerings in winter and summer, a model based on 100% IDOR will be used, as the main expense associated with these offerings will be extra compensation for instruction.

Special sessions revenue formulaic allocation incentivizes colleges and departments to leverage planned investments in new and replacement faculty, including cluster hires, create better offerings for summer and winter courses/programs, and increase revenue to the University. Complementary development of new or enhanced international programs is a desired effect of the UD budget model. Increased special sessions activity will improve graduation rates and maximize space capacity by

utilizing empty classrooms during special sessions while complementing regular academic year offerings and programs.

Total tuition revenue, rather than incremental revenue above the FY2017 base, is the basis of this portion of the model. Total revenue from credit-bearing undergraduate courses during winter and summer will be pooled, and the blended rate will be allocated 50% to fund college support unit's contractual obligations and 50% to the dean to make department incremental revenue allocations.

Figure 2.1-5. Growth in special session credit hours by college for FY2017 through FY2020.

Undergraduate Special Sessions Credit Hours				
	FY20 Winter	FY20	FY20 Summer	FY20
	IDOR	% of Total	IDOR	% of Total
CANR	623.0	3.1%	1,071.0	7.1%
CAS	11,221.0	56.5%	8,101.0	53.8%
LCBE	4,618.0	23.2%	2,998.0	19.9%
COE	369.0	1.9%	439.0	2.9%
CEOE	492.0	2.5%	429.0	2.9%
CHS	1,684.0	8.5%	1,089.0	7.2%
CEHD	788.0	4.0%	537.0	3.6%
Research Institutes	0.0	0.0%	0.0	0.0%
Other	69.0	0.3%	387.0	2.6%
Total	19,864.0	100.0%	15,051.0	100.0%

- (4) *F&A revenue*: This revenue comprises reimbursements for allowable research expenses incurred by universities conducting sponsored research. Incremental F&A revenue is defined as total University F&A revenue in a given year minus FY2017 F&A revenue.

PIs will split 5% of the University incremental revenue based on each PI's relative percentage contribution to total F&A generated in that year, and the remaining University incremental F&A revenue will be distributed based on the percentages outlined in the funding allocation matrix shown in Figure 3.1-2.

- *Contractual obligation funds* are resources above the base necessary to fund the University's ongoing investments and necessary expenses.

One overall contractual obligation fund will be created by combining 50% of incremental revenues from undergraduate tuition, graduate tuition, and special sessions as well as 45.5% of incremental revenues from F&A. This split is essentially 50% and is clear, easy to understand, and consistent among each of the revenue streams. Providing administrative support for academic units requires significant recurring investments; therefore, 50% of incremental revenue is justified. The following are examples of contractual obligations that will be funded:

- Investments in research infrastructure, information technology personnel, and new software (online).

- Investments in non-revenue generating units that support the institution including libraries, academic administration, tutors, central advisors, and administrative units, as well as compliance-related items for facilities and employee health and safety, campus infrastructure and deferred maintenance.
- *Differential fees* - The UD budget model formula incorporates differential fees as well as course fees, with both flowing 100% to the college, to account for the higher cost of some courses/curricula. Differential fees were first implemented in FY2019 in the Lerner College of Business and Economics, College of Engineering, and School of Nursing, and were phased in over three years and are fully implemented in FY2021. As part of the commitment to affordability, students enrolled in summer and winter sessions are not charged the differential fee.

2.2 UNIVERSITY OF DELAWARE BUDGET MODEL IMPACT

The UD budget model impacts colleges, departments, and centers within colleges and research institutes. Budget realignment is critical to the successful implementation of the budget model and expected to continue at both the college and department levels to adapt to the way resources will flow under the UD budget model. In phase two of the budget model implementation, it is important to understand that while departments may directly receive more resources, the expectation is that these resources will be offset by absorbing more expenses than were previously transacted at the department level. This process will allow for a more equitable and transparent view of department finances both across and within colleges; that is, a better alignment of revenue with expenses. As such, it is understandable that the development of this approach will take time and further refinement as idiosyncrasies are uncovered within individual colleges and departments. Phase two of the budget model implementation is shown in Figure 2.2-1.

Figure 2.2-1. Funding allocation matrix in phase 2 of implementation (eventual)

Factor	Incremental			Total			
	Undergraduate Incremental Revenue ¹	Graduate Incremental Revenue ²	Incremental F&A ⁴		Special Sessions Revenue (Winter/Summer Sessions)	Differential Fee	Course Fee
Metrics							
Student Head Count by Major	25%						
Instructor Department of Record—Taught	75%	50%			100%		
Subject by Course Ownership		50%					
Distribution							
College	50%	25%	38%		25%	100%	100%
Department	0% ³	12.5%	9.5%		25%		
Program		12.5%					
Institutes				47.5%			
Principal Investigators				5%			
Arts & Humanities				2%			
Contractual Obligation Fund	50%	50%	45.5%		50%		

¹Undergraduate Incremental Revenue is calculated net of financial aid.

²Graduate Incremental Revenue is calculated as gross revenue and does not include graduate tuition expenses, which are transacted at the department level.

³Undergraduate Incremental Revenue will not be formulaically distributed to departments; however, metric report results are to be shared with each department.

⁴47.5% of incremental F&A will be allocated to either colleges/departments or to University-wide institutes depending on the source of the F&A.

Departments can initiate requests for additional University funding via the budget cycle through their respective dean. As part of that process, department chairs have the opportunity to request resources to support existing and/or new initiatives and make the case for why the funds are needed and how they

will be used to support strategic plans in their units. **Appendix G** contains detailed information on budgeting and the main sources of funds at the department level.

University of Delaware Budget Model Incentives

As mentioned, this model incorporates predictable base allocations, activity-based incentives, and strategic elements in its design. *Predictable base allocations* provide consistent resources at both the department and college levels, which will help facilitate future year planning. *Activity-based allocations* are meant to incentivize colleges, departments, and faculty to participate in entrepreneurial activities that will benefit the entire campus. To do this, there is a quantitative distribution in the UD budget model that provides colleges and departments with a formulaic reward for growth in their programs. However, the University must ensure that quality is not sacrificed for quantity, which is the reason for the *strategic portion* of the model.

Whenever an element of qualitative distribution is introduced, there is risk of apparent or actual inequity. To deal with the possibility that the model might provide adverse incentives to certain areas, the new budget model will ensure transparency at all levels of the budgeting process. The data provided by the model will be available to each dean, and it is expected that metrics will be transparent at the college, institute, and department levels. This transparency breeds accountability when making strategic distributions and is meant to empower deans and department chairs to make better cases for receiving additional funding for strategic initiatives in the future.

To that end, holistic financial statements are being developed for all departments that will provide both metric and budgetary evolution over the base year. Example metrics include graduate and undergraduate head count, faculty growth, and F&A revenue generated as well as departmental expenses. These department financial statements will be automated and available to the dean and CBO to then review with the department chairs. This information will allow both deans and departments to see how each unit is tracking toward targets set at the beginning of each fiscal year. Only department metrics will be shared across departments; actual dollar-value budget allocations will not be viewable by other departments.

The purpose of department financial statements is to create transparency and reinforce to departments that they have the responsibility to generate additional resources. These financial statements will highlight the strategic investments made within departments and calculate the incremental revenue targets required to cover these investments. They will also help deans determine how much of a college's resources should be allocated to departments.

2.3 UNIVERSITY OF DELAWARE BUDGET MODEL AND SPACE COST ALLOCATIONS

During block budgeting and before RBB was launched in FY2009, space costs (e.g., utilities, general maintenance, renovations, and repairs) were paid centrally and usually funded by unspent surplus monies at the end of each fiscal year. Colleges and units were responsible for covering 100% of off-campus leases, unless the decision to move off campus was determined by senior leadership.

When RBB was launched, colleges were allocated a portion of the utilities, facilities, and capital costs that had previously been covered centrally. Costs were allocated using metrics such as square footage occupied and by applying factors to account for various types of space, such as laboratory space (which is more expensive to operate than a typical classroom). Colleges and units continued to be responsible for covering 100% of off-campus leased space. Self-supporting units paid for their own utilities and facility charges.

Space cost allocations in the new UD budget model require further discussion, analysis, and resolution, with special attention paid to how new space costs are to be allocated. The following factors apply under the UD budget model:

- Self-supporting units continue to pay for their own utilities and facilities charges.
- Space costs, as well as leased space agreements in place prior to FY2017, are currently being covered 100% by base allocations.
- New space costs, including bond payments and operating costs, will be charged back to the units prorated to usage, including interdisciplinary space such as BPI and FinTech buildings. Leased space agreements created post-FY2017 are being allocated 100% to the unit that occupies the space and should be covered by increased incremental revenue.

3 NON-REVENUE GENERATING UNITS

Non-college base budgets were analyzed using a zero-base budget process and adjusted over a 2-year period to align expenses appropriately. Expenses were reviewed in detail to ensure recurring expenses are funded by recurring funds and one-time expenses are funded by one-time resources. Year-end surpluses in base budget funding generated by non-college units are not retained by the unit and are returned centrally.

Non-college units are allocated a base budget annually that will only be increased to account for contractual increases, such as merit and fringe benefits, which are funded by the previously mentioned contractual obligation fund. New expenses related to compliance and in support of the strategic plan must be presented during annual budget presentations. Before approvals are made, all requests are reviewed in detail by the President's Office, Provost's Office, Executive Vice President–Chief Operating Officer's Office, Human Resources, and Budget Office with input from the unit making the request. It is expected that new non-faculty or compliance personnel considered to be a unit's highest priority must be funded from current, available funds within the unit's budget by implementing cost-saving strategies or reimagining or repurposing existing positions unless the positions represent a significant change in scope.

While units will be authorized to fill vacancies critical to the success of their operation, when a position is vacated, it presents an opportunity for a unit to assess its operations and reimagine the enterprise. Ideally, there should be no "automatic replacements"; instead, units should thoughtfully consider the following:

- How could these responsibilities be fulfilled by others, either in the unit or centrally?
- What is the opportunity to reassign, reclassify, or reorganize existing positions or duties?
- What opportunities are there for shared services?
- What risks are associated with not replacing this position?

This process is designed to emphasize critical examination of existing resources and shared services models. More justification, including how these positions will enhance the strategic goals and priorities of the University, will be required at the beginning of the process to obtain approvals.

Similarly, review of non-salary expenses is being conducted to see where expenses related to consultants, contracts, and other activities can be reduced.

4 BUDGET REDUCTION PRINCIPLES

An unfortunate reality in any budget model involves planning for the possibility of budget reductions, related to enrollment shortfalls, state budget cuts, or other revenue shortfall. While much of this paper has outlined techniques for allocating additional resources, a balanced model must also outline a strategy for distributing reductions.

The following are principles that will be used to guide the development of budget reduction plans while staying true to the University's mission:

- Health and safety of the University's students, staff and faculty are our top priority.
- Budget reductions should have minimal impact on student success, including recruitment/access, retention, persistence, ease of transfer, and timely completion of degrees.
- UD will continue to consider the quality of academic programs, at both graduate and undergraduate levels, as the highest priority. Our most enduring legacy is the success of our graduates, who use their education to better their lives, our state, and the world around them.
- UD will maintain or enhance excellence in research, scholarship, and creative activity to contribute to the state's economy and enrich society.
- UD will preserve to the extent possible the core faculty and staff.

To that end, reductions to administrative functions should be considered before those that affect academic functions, and budget reductions to the academic sector on average will be less severe than to the administrative areas.

The University will be as transparent as possible in dealing with budget reductions to provide ongoing communication with the campus. The UD budget model incorporates the principle that the allocation of budget reductions should be made on the basis of sound, long-term strategic consideration and priorities. Such considerations include protecting, as much as possible, the following priorities:

- Academic programs that are in line with the University's strategic plan and most essential missions.
- Academic programs that sustainably generate revenue.
- Administrative services that support academic programs.
- Other administrative services that support institutional priorities.

5 NEXT STEPS

UD's goal is to create and successfully implement the proposed UD budget model. During the first year of implementation, the University revised the methodology to increase efficiency and simplicity; however, there is still an expectation to continue to make changes to ensure progress is on the right track. In addition, a review in 3–5 years makes sense with any budget model, as Figure 5.1 illustrates. However, in the changing climate that higher education has been facing in recent years, it is critical to ensure the model is sufficiently nimble to respond to both opportunities and threats.

UNIVERSITY OF DELAWARE BUDGET MODEL TIMELINE

Time	Action
December 11, 2017	President charged Hybrid Budget Model Steering Committee
January 2018 – early March 2018	Subcommittees for each revenue stream met and submitted hybrid budget model recommendations https://sites.udel.edu/budget/budget-model/
April – early May 2019	Hybrid Budget Model recommendation review, modeling and consultation with Faculty Senate Budget Committee and leadership in Graduate College, Research Office, CAS and Faculty Senate President.
October 7, 2019	Collective deans meeting to discuss UD budget model status and department-level distributions
October 7, 2019	General Faculty Meeting
Mid–Late October 2019	Individual deans' meetings to discuss college/department resource distributions
November–December 2019	Deans and CBOs work with Provost's Office and Budget Office to create department base budgets and align expenditures with appropriate departments
November 18, 2019	Faculty Senate Budget Committee Meeting and Faculty Senate Executive Committee Meeting
November 20, 2019	Chairs' Caucus Meeting
December 4, 2019	Town Hall in Trabant Theater to discuss UD budget model
January 30, 2020	Initial Draft Paper released to president and provost for review
March 2020	Original planned release date of draft paper to campus for review [release delayed due to COVID-19 pandemic]
January 20 & 26, 2021	Mini-retreat to discuss proposed model changes with Provost, Vice-President of Research, deans, and Budget Office; President Assanis joined the final day
March 2021	New UD budget model revisions were modeled (because of mini-retreat) and approved
Summer 2021	Draft Paper released to campus

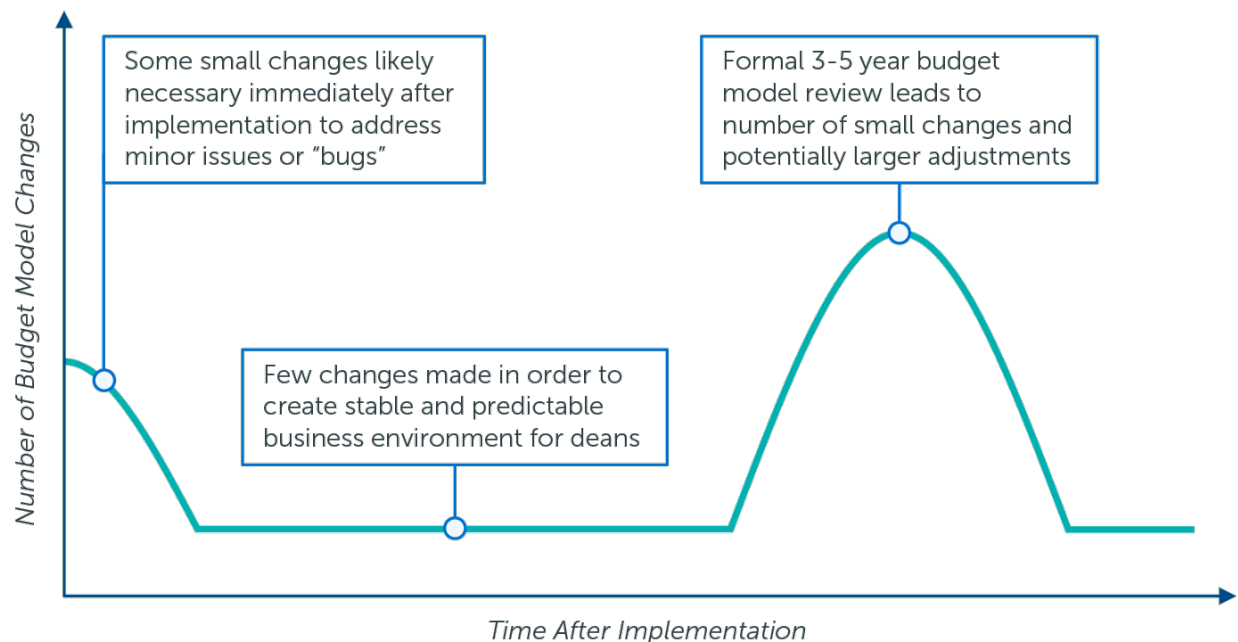
The budget model needs to be reviewed over time to ensure the goals of the model are met, that unintended consequences do not arise and create unwanted behaviors, and that the budget model remains relevant to incentivize the intended behaviors given the current environment, external and internal. All relevant stakeholders are to review the goals with a clear understanding of both early and continued indicators of success. Early indicators of a successful budget model include the following:

- Stakeholders' understanding of the budget model and how it applies to them and advances the institution.
- Clear reports of metrics and allocation of revenue distributed at regular intervals to facilitate planning.

- Allocation of revenue according to the distribution percentages using verifiable, institutionally approved data.
- Accurate cost accounting of academic programs at department levels.

Continued indicators of success include increases in institutional revenue to cover annual recurring strategic investments, such as faculty hires and new facilities, as well as increases in interdisciplinary program revenue generation. It is critical to review not only the revenue the University generates but also the publications and citations that faculty produce and the students the University graduates more quickly and with increased retention, lower debt, and lower time to degree completion. The University’s goals are to see an innovative and diverse faculty and student body, and the UD budget model, budget system, and University members at all levels are vital to ensuring these goals are reached.

Figure 5.1. Budget model changes over time.



Source: EAB (2016).

LIST OF ACRONYMS

CANR	College of Agriculture and Natural Resources
CAS	College of Arts and Sciences
CBO	college business officer
CEHD	College of Education and Human Development
CEOE	College of Earth, Ocean and Environment
CHS	College of Health Sciences
COE	College of Engineering
F&A	Facilities and Administration
FY	fiscal year
IDOR	instructor department of record
LCBE	Lerner College of Business and Economics
PI	principal investigator
RBB	Responsibility-Based Budgeting
SCH	student credit hours
UD	University of Delaware
UDBM	University of Delaware budget model
UST	University Studies

APPENDICES

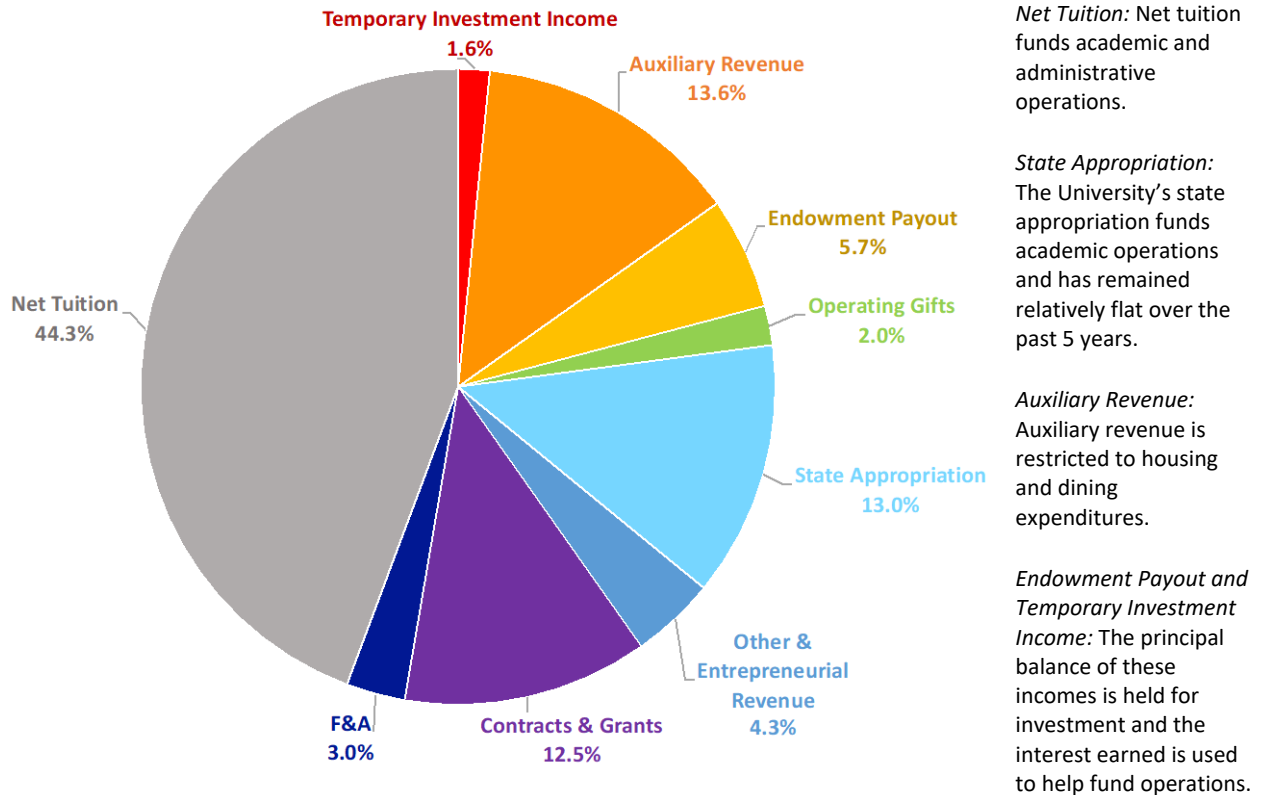
APPENDIX A: UNIVERSITY OF DELAWARE'S FINANCIAL STRUCTURE

The University is a state-assisted, privately governed postsecondary institution with a variety of funding sources. Many of these sources are restricted in nature and allocated based on specific purposes. UD's financial profile can be reviewed in detail on our [website](#), which includes the university's multiyear operating and capital budgets including liquidity.

FUNDING SOURCES

UD receives funding from a variety of sources, including tuition and fees revenue, state and federal appropriations, sponsored-award funding, philanthropy, auxiliary revenue, and F&A cost recoveries. Figure A-1 presents the sources of funding for FY2021.

Figure A-1. Sources of funding for UD's FY 2021 budget.



F&A = Facilities and Administrative.

As Figure A-1 illustrates, net tuition and fees represent the largest share (44.3%) of funding for UD.

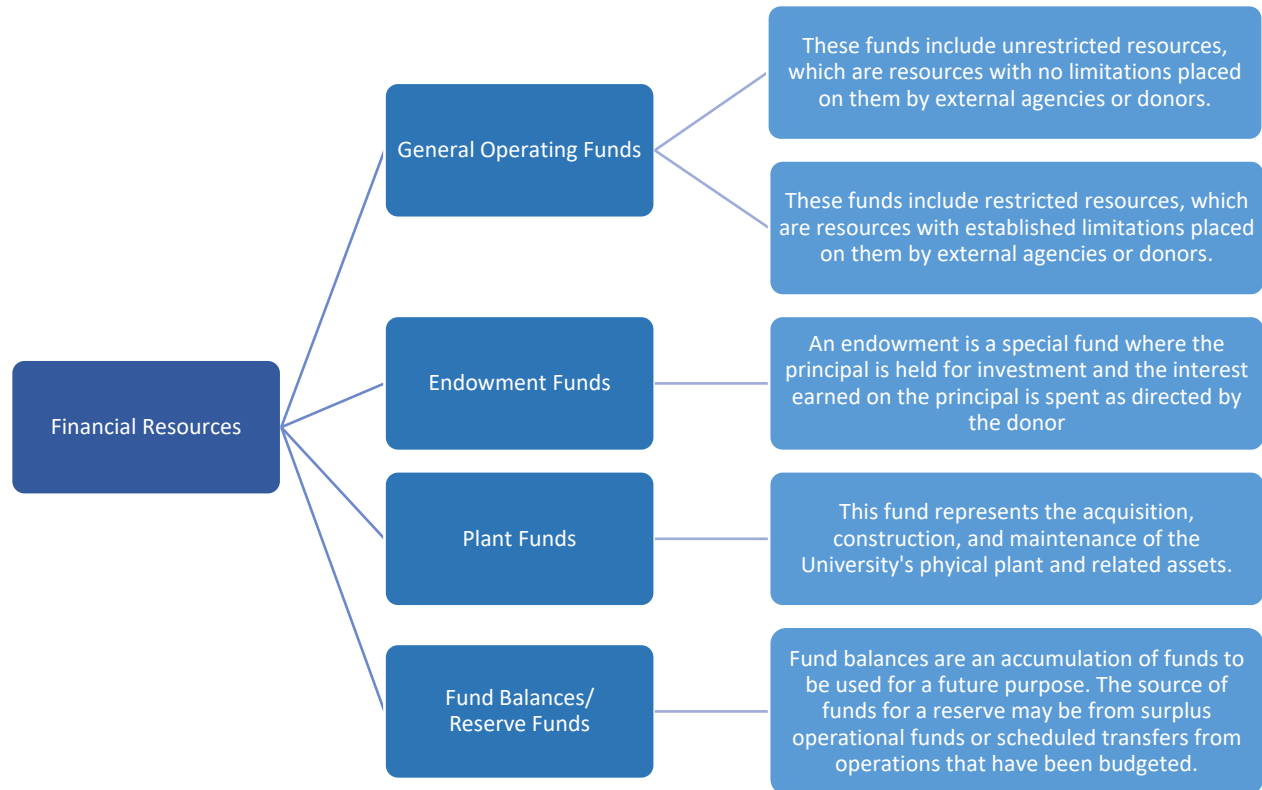
The University uses "fund accounting," which is a system commonly used by nonprofit and governmental organizations (including universities) and emphasizes accountability over profitability. Fund accounting

ensures proper stewardship and expenditure of financial resources received and compliance with the regulations, guidelines, and restrictions associated with the funds.

RESOURCE TYPES

UD classifies financial resources into one of the four following categories: (1) General Operating Funds, (2) Endowment Funds, (3) Plant Funds, and (4) Fund Balances/Reserve Funds. Figure A-2 presents the grouping of these financial resources.

Figure A-2. Classification of UD’s financial resources.



Appendix B describes the major categories of unrestricted and restricted General Operating Funds and includes more information about the Endowment Funds, Plant Funds, and Fund Balances/Reserve Funds.

In 2016, the University’s Board of Trustees provided guidance to the administration that it spend down fund balances, also known as reserves, at every level of the University by strategically reinvesting funding into the University to increase faculty, enhance quality and diversity, grow programs, and begin to address a deferred maintenance backlog that had grown to nearly \$500 million.

Tuition generation or unrestricted basic budget funding is the key component of the UD budget model. Unrestricted General Operating Funds can be used for any University purpose, whereas restricted funds are targeted to specific purposes. Restricted funds play a major role in the budget as they cover many expenses in the colleges and support units for which it is difficult to raise money.

APPENDIX B: TYPES OF FUNDS

UD classifies financial resources into one of the four following categories: General Operating Funds, Endowment Funds, Plant Funds, and Fund Balances/Reserve Funds.

- **General Operating Funds:** These funds represent the resources used for core operating support, advancing the University's overall mission.
 - **Unrestricted:** Unrestricted resources are those with no limitations placed on them by external agencies or donors. The major categories for these funds including the following:
 - **Basic budget:** This budget is instructional support composed of undergraduate and graduate tuition and fees, including differential fees, facilities and administrative cost recovery, unrestricted gifts, unrestricted state appropriations, and unrestricted endowment income.
 - **Self-supporting:** These funds come from entrepreneurial activities such as sales of products and services that generate revenue to support related expenses. Auxiliary and self-supporting units, which are not included in the budget model, prepare their budgets based on their business plans and projected use of their products and services.
 - **Restricted:** Restricted resources are those with established limitations placed on them by external agencies or donors. The major categories for these funds include the following:
 - **Restricted state appropriations:** These appropriations are made to the University by the State of Delaware and are restricted to a specific purpose.

Note: Since 2015, the state operating appropriation has been relatively flat at 10–12% of total university resources. Lack of growth in state support impacts our ability to keep up with increasing costs, putting further pressure on the use of other funding sources. This further supports the development of a new budget model that rewards and broadens resource growth to fund the University.
 - **Federal appropriations:** These appropriations are made to the University by the federal government for agricultural operating purposes.
 - **Sponsored programs:** These programs are grants and contracts from federal, state, and private sources.
 - **Private gifts:** These gifts are funds provided by donors to the University for a specific purpose.
 - **Other restricted:** Other restricted funds are those received from other sources that are restricted to a specific purpose.
- **Endowment Funds and the Pooled Portfolio:** An endowment is a special fund where the principal is held for investment and the interest earned on the principal is spent as directed by the donor.
 - The University endowment consists of more than 1,250 individual funds totaling about \$1.4B, as of FY2021, that were established for a variety of purposes and are intended to provide perpetual funding to support the University's educational goals. The endowment comprises approximately

\$1B in donor-restricted funds that must be used in accordance with donor intent and \$357M of board-designated funds that may be used for purposes of the University, as determined by the Board of Trustees. The ongoing generosity of UD alumni and friends has helped to ensure the long-term financial health of the University through the establishment of endowed gifts. The University has an obligation to ensure those gifts support the University for many years to come. A strong endowment allows the University to fund initiatives that have a lasting impact on the student experience and the overall institution.

In recent years, the endowment's role in supporting the University has become more important as state funding has been relatively flat and UD's commitment to access and student financial aid has increased. This support is likely to become even more important in the coming years given the challenges facing higher education today.

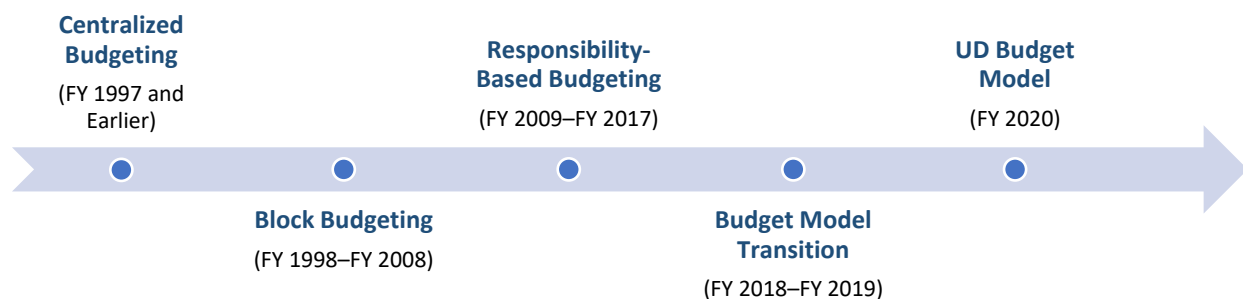
To ensure endowment funds are available in perpetuity, the University's Board of Trustees, Investment Visiting Committee, and administration have a shared mission to maximize the endowment's total return consistent with the University's prudent investment risk constraints and preserving real value for future generations. This mission requires an expected long-term return that exceeds the inflation-adjusted annual spending rate. The target spending rate for the endowment is 4–5% of the 3-year average market value as determined annually by the University's Board of Trustees. In FY2020, the spending distribution from the endowment was \$52M, providing financial support and flexibility to the University's operating budget.

- **Plant Funds:** These funds represent the acquisition, construction, and maintenance of the University's physical plant and related assets. They are grouped into two categories:
 - **Investment in plant:** These funds include capitalized assets in the service of the University.
 - **Renewal and replacement:** These are funds for deferred maintenance and capital renewal.
- **Fund Balances/Reserve Funds:** Fund balances are an accumulation of funds to be used for a future purpose. The source of funds for a reserve may be surplus funds from operations or scheduled transfers from budgeted operations.

APPENDIX C: HISTORY OF BUDGET MODELS AT THE UNIVERSITY OF DELAWARE

This section walks through the types of budget models that UD has used over its history, starting with the timeline presented in Figure C-1.

Figure C-1. Timeline of UD budget models.



FY = fiscal year.

CENTRALIZED BUDGETING | FISCAL YEARS 1997 AND EARLIER

Before FY1998, UD’s budget was managed centrally. Deans did not have the authority to manage their colleges’ funds, and all requests for funding had to flow “up the chain” for approval. This approach did not incentivize deans to manage salary expenses, and there were no incentives to increase grants or create revenue-generating programs.

BLOCK BUDGETING | FISCAL YEARS 1998–2008

From FY1998 to FY2008, UD operated under a block budgeting system, also known as an incremental budgeting system, which was the primary budget model in higher education before the expansion of activity-based budgeting systems. Colleges and the Library were allocated block budgets, which were adjusted annually for merit increases. While this approach incentivized colleges to keep college-specific expenses low and generate sponsored activity, there was no incentive to make frugal use of the University’s resources or space or to increase undergraduate or graduate tuition revenue.

RESPONSIBILITY-BASED BUDGETING | FISCAL YEARS 2009–2017

From FY2009 to FY2017, RBB was designed and implemented to incentivize entrepreneurial activities within colleges, consistent with similar activity-based budget models emerging across the country. Ownership of revenue was at the college level, and new revenue was not consistently distributed directly to the department or faculty that generated it. Colleges were allocated unrestricted revenue, which is defined as undergraduate tuition net of aid, endowment payout, and state and student fee income using metrics. Central unit costs were allocated using multiple metrics, such as student head count, employee full-time equivalents, assigned space square footage, and sponsored activities. Colleges kept all unspent funds to cover college-specific expenses, which limited cross-college collaboration and resulted in the duplication of administrative positions University-wide.

The ability to keep unspent funds allowed the accumulation of large reserve balances at many levels of the University. RBB flowed the majority of funding to colleges, limiting the amount of centrally available

resources to invest in strategic initiatives (especially if they were not revenue-generating), and failed to address the deferred maintenance backlog. Central support was initially set so no college would be in an immediate deficit because of the new system. Since the initial determination of subvention amounts, the distribution has changed, but the overall subvention amount (\$50 million) has remained the same.

In 2013, in preparation for a new provost and the development of a new strategic plan, the deans and the Provost's Office revisited discussions of how the RBB model was working at the University. It was determined that the deans were supportive of using an RBB model and agreed that RBB should support the mission and strategic plan of the University; however, the following issues and concerns were raised by colleges/functional units:

- Some colleges felt that they were not allocated sufficient resources, and nonacademic units felt they were not budgeted correctly to support the institution.
- Colleges felt that the capacity to grow tuition was capped because undergraduate tuition is the primary driver of revenue, and yet central targets and financial aid strategies were not directly linked to college planning and net tuition revenue at the unit level.
- Transparency was not yet achieved at all levels regarding budget process and allocation.
- Each unit was creating its own decision reports and metrics, and data were not consistently reported across units.
- Space utilization efficiencies were not realized in a significant way because units still managed space at a college level as opposed to across the University.
- "Subvention" (university subsidy) remained and units were not "tubs on their own bottoms."
- Strategic initiatives, including those that could propel units forward in terms of excellence and student success, were not incentivized, particularly for initiatives that crossed colleges.

Notably, many of these issues are not UD-specific; many institutions that adopted distributed, activity-based models experienced many of the same problems. Most of the potential problems with activity-based budgeting derive from its strengths. By providing support for activities that are directly attributable to individual units within the University, there exists the possibility that activities for which such attribution is difficult or contested will be under supported. In addition, many vital parts of the University, including libraries, campus police, and a number of academic departments, cannot survive based on revenues they generate directly. Many universities that have implemented activity-based models have conducted campus-wide debates on the possible negative consequences these models can have on collaborative work, interdisciplinary research and teaching, campus-wide activities, and activities that are academically vital but not especially popular. Indeed, this set of concerns in particular led the University of Michigan to adopt an activity-based system that leaves considerably more room for central discretion and support of campus-wide activities than is normal for such systems.

In September 2015, UD's then-Provost Domenico Grasso and the seven college deans adopted a modified activity-based budget model, referred to as UBUD, to be fully implemented in FY2018. UBUD aimed to accomplish the following:

- Increase simplicity, transparency, and predictability.
- Improve clarity in reporting to enable calculating net operating margins.
- Incentivize revenue growth.
- Allocate each resource separately and associate revenues with the expenses that generate them.
- Utilize a tax called the One University Support to foster simplicity in the recovery of most central expenditures.

- Allocate utilities, facilities, and capital maintenance to all units, including central units.

When President Assanis joined UD in mid-2016, he continued to hear concerns that an activity-based model was no longer meeting the University's needs, and that the model resources would be insufficient to achieve strategic priorities because it favored a more decentralized approach, limiting available resources for University-wide support services and strategic initiatives. Other institutions also included some form of incentive at levels lower than the colleges, even at the faculty level, and it was determined that UD should explore this option.

BUDGET MODEL TRANSITION | FISCAL YEARS 2018–2019

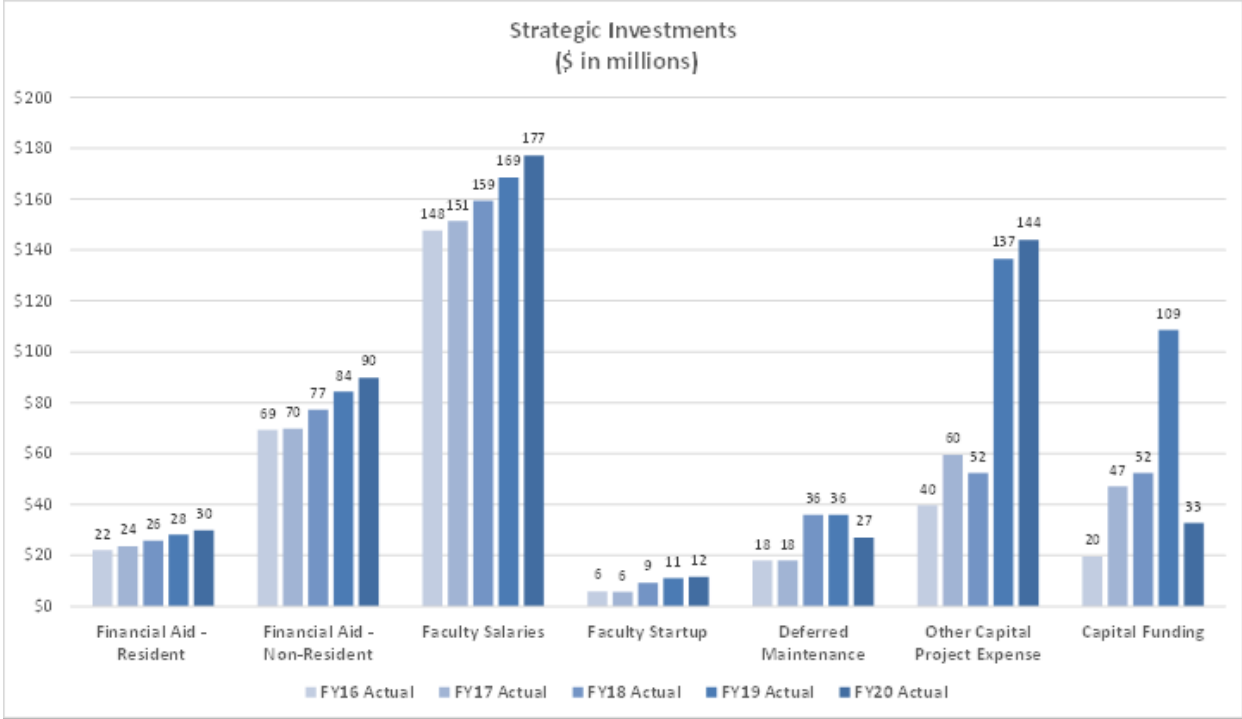
In December 2017, President Assanis charged the Budget Model Steering Committee, composed of faculty and staff organized into four topic-specific subcommittees, to develop a new budget model for the University. The subcommittees made advisory recommendations that led to the development of the UD budget model, which was launched for the FY 2020 budget cycle. (Appendix C presents a detailed timeline of the UD budget model development.) The UD budget model functions within a hybrid system of responsibility-centered budgeting, incremental budgeting, and centralized/initiative budgeting. This mix of approaches allows the University's leadership to see clearly the fiscal implications of activities at the school/college/department level while allowing considerable flexibility to set priorities and adjust for fiscal circumstances. The UD budget model incorporates predictable base funding, formulaic returns of incremental revenue generated above the base, and after college support units contractual obligations are met will provide funds to advance strategic initiatives. It provides essential University-wide support services while retaining incentives to reward unit-level success and fuel developing new programs and revenue streams. The model is meant to create incentives that promote academic excellence, financial sustainability, fiscal responsibility, innovation, and entrepreneurship. The model also provides transparency, clarity, and predictability at all levels.

During the transition period, President Assanis continued to invest in colleges at an accelerated pace. Deans were able to begin funding new investments related to the following long-term strategic goals that were set by the president and the provost:

- Increase faculty by 250 net new hires, including cluster hires.
- Increase undergraduate international enrollment by at least 1,000.
- Increase graduate enrollment.
- Invest in scholarship funding to raise quality and increase diversity.
- Invest in compliance, academic and performance support for athletics, including infrastructure.
- Increase capital investment to create new and revitalize existing buildings
 - Invest in new infrastructure, such as Ammon Pinizzotto Biopharmaceutical Innovation Center (BPI), the WorriLOW renovation and expansion, and the McKinly rebuild.
 - Double deferred maintenance investment from \$18M to \$36M annually for 10 years to address the large deferred maintenance backlog.

Collaborative conversations and requests from colleges and departments resulted in many college investments with the expectation of generating new revenue streams over the next 5+ years to sustain financially. Figure C.2 illustrates the increased strategic investments that have occurred since FY 2016.

Figure C.2. UD's strategic investments by cost type for FY2016 through FY2020.



APPENDIX D: PEER INSTITUTIONS

UD's budget model is a hybrid model that incentivizes transparency, accountability, and entrepreneurship. Many institutions are implementing hybrid budgeting models to achieve financial accountability and transparency while preserving their mission-critical activities. Based on a sample of 30 institutions (including the American University, Temple University, University of Pennsylvania, Rutgers University, and Ohio University) from EAB's Compendium of Budget Model Profiles, this section presents key findings and strategies that higher education institutions use to structure their revenue and cost allocations, subvention, and strategic reserves.

DEGREE OF ACTIVITY-BASED REVENUE AND COST ALLOCATION

Institutions incorporate activity-based incentives into budget models in various ways.

The profiled institutions use different forms of activity-based revenue allocation to incentivize unit-level performance goals. More than half of them use highly decentralized budget models with some degree of activity-based tuition revenue allocation (i.e., units receive financial resources based on their share of student activity as defined by the institution). On the other hand, one-sixth of the profiled institutions maintain highly centralized budget models yet allocate a small portion of their overall revenues to performance pools or revenue-sharing agreements. Most of these institutions cite an intentional commitment to centralized budgeting for institution-specific reasons (e.g., a strong shared religious mission or focus on large-scale central strategic investments in student success programming or faculty growth).

Some models recognize differences in graduate and undergraduate enrollment strategies.

Seven profiled institutions use hybrid budget models that fall near the middle of the centralized/decentralized spectrum. Three of these institutions allocate all or some graduate/professional tuition revenues formulaically to incentivize program growth while setting undergraduate program budgets incrementally. Many of these institutions cite a centralized undergraduate enrollment strategy as the reason for maintaining incremental budgeting for undergraduate programs.

Select institutions incentivize unit-level revenue growth while maintaining central cost coverage.

Four profiled institutions use hybrid models that allocate tuition revenue to all academic units (graduate and undergraduate) but cover nearly all overhead costs centrally. Acknowledging institutional imperatives to grow revenue, these institutions intentionally encourage units to prioritize revenue generation over cost cutting.

There is no clear link between demographic factors and degree of model centralization.

Among profiled institutions, no noticeable link exists between the degree of budget model centralization and demographic factors, including the size of the operating budget, research intensity, and public/private affiliation. While many profiled institutions with large enrollments have moved toward decentralized budget models, the size of an institution's student body does not necessarily predict its degree of budget centralization. Counterintuitively, two of the largest profiled institutions in terms of enrollment have committed to maintaining centralized budget models, while the smallest profiled institution successfully uses a highly decentralized model.

TUITION REVENUE ALLOCATION

Most decentralized models allocate 100% of tuition revenue to academic units.

Among profiled institutions using decentralized models, more than four-fifths allocate all tuition revenue to academic units. The remaining institutions hold a portion of tuition revenue centrally for subvention and/or strategic initiatives. Most institutions that allocate 100% of tuition revenue recoup resources for central needs through back-end taxes (i.e., taxes levied after revenue allocation), so academic units net similar proportions of tuition revenue under both methods. Institutions that allocate 100% of revenues directly to units value this method as more transparent than retaining some resources centrally prior to revenue allocation.

Institutions are split between rewarding growth quickly and building predictability into revenue allocation.

The profiled institutions base tuition revenue allocations on varying time frames of student activity, ranging from current-year actual enrollments to an average of 5 years' historical enrollment data. Among institutions using activity-based tuition revenue allocation, approximately one-fifth base their allocations on current-year enrollment data or current-year projections. More than one-quarter use prior-year data, while the remaining institutions smooth enrollment data over 2- to 5-year rolling averages. Institutions that use current-year data desire to reward unit revenue growth as it occurs, ensuring those units have adequate resources to support growth. On the other hand, institutions that use rolling averages of current- and prior-year data seek to help units project revenues and mitigate the financial impact of unanticipated enrollment shifts.

Most institutions divide undergraduate tuition revenue allocation between units of instruction and enrollment, but revenue weightings vary.

The profiled institutions using activity-based revenue allocation take varying approaches to weighting tuition revenue allocations between student credit hours and majors. Among institutions using activity-based revenue allocation for undergraduate tuition, more than two-thirds split tuition revenue between the unit of instruction (i.e., rewarding credit hours taught) and the unit of enrollment (i.e., rewarding majors). While no strong preference for a particular weighting exists, one-third of profiled institutions in this category allocate 75% of undergraduate tuition revenue to the unit of instruction and 25% to the unit of enrollment—the most common weighting observed. Alternatively, three institutions maintain unique revenue-sharing arrangements between different academic units to recognize differences in their cross-teaching loads.

Public institutions differ on allocation methodologies for unrestricted state appropriations.

Among profiled public institutions, no strong preference for allocating unrestricted state appropriations exists. Slightly more than one-quarter of profiled public institutions allocate all state appropriations formulaically to units to supplement tuition revenues, while an additional one-third allocate at least a portion to units. The remaining profiled institutions hold all state appropriations centrally to invest in subvention or strategic initiatives. The observed disparity in methodologies may reflect institutions' varying responses to unpredictable state funding patterns for higher education.

CENTRAL SUPPORT SERVICES COST ALLOCATION (OVERHEAD)

Most institutions that allocate revenues also charge for central overhead costs.

Among the profiled institutions using activity-based tuition revenue allocation, more than four-fifths charge some or all academic units for a share of central overhead costs. Of these institutions, more than three-quarters use activity-based models that recoup funding for central overhead using cost pools and drivers. Nearly one-tenth levy flat taxes on unit revenues to cover overhead cost charges, while the remaining institutions have negotiated individual cost-sharing arrangements between units and the central administration. Institutions charge for central overhead costs to instill greater financial accountability among units and incentivize reduced consumption in certain areas (e.g., space, utilities).

Institutions use a wide range of cost pools and drivers.

The number of cost pools used by institutions that charge units for overhead costs through cost pools and drivers ranges widely, from as few as 3 to as many as 29. The mean number of cost pools used is 9.8, while the median is 8. More than one-third of these institutions assign one unique driver to each cost pool. The profiled institutions in this category allocate overhead cost pools using a maximum of 10 drivers per pool, although close to two-thirds of institutions use fewer than 3 drivers per pool. Those institutions using fewer cost pools and drivers desire to keep their models simple, while those using more cost pools and drivers aim for more precise models to win unit buy-in.

FUNDING CENTRAL STRATEGIC PRIORITIES

Decentralized models favor taxing units to fund strategic initiatives.

Half of the profiled institutions hold back some resources (i.e., “off-the-top” or on the “front end”) before allocating revenues to units to fund central strategic priorities. The other half either tax unit revenues after allocation to fund strategic initiatives or use a combination of both approaches. Units using highly decentralized budget models favor taxing unit revenues after allocation, with nearly three-quarters of such profiled institutions choosing this approach.

Designating taxes for specific initiatives signals institutional priorities.

While most institutions charge one flat tax to fund all strategic priorities (i.e., academic, administrative, facilities, and subvention), three institutions charge multiple taxes, with each tax designated for a different type of strategic priority. Notably, two of these institutions levy designated taxes to fund research growth. Not only does this provide additional resources for research investments, but it also signals to the university community that research is an important institutional priority.

Regressive taxes are more prevalent but may result in greater downstream subvention needs.

The majority of institutions using back-end taxes to fund central initiatives use regressive taxes, which charge all units at the same tax rate. Only one profiled institution levies a progressive tax, taxing units with higher shares of the institution’s overall direct expenditures at higher rates. When determining which type of tax to levy, institutions consider downstream implications of each tax type. For example, units in structural deficits or facing short-term financial challenges often require higher subvention payments when charged regressive taxes over progressive taxes.

STRUCTURING SUBVENTION

Subvention approaches vary with degree of model decentralization.

Nearly all profiled institutions provide subsidies to units in structural deficits or with high instruction costs. All institutions using more centralized models build subsidies into units' historical base budgets. Among institutions using more decentralized models, close to three-quarters award subvention funding either through a set formula or at senior leadership's discretion. Less than one-tenth of these institutions use weighted credit hours to redistribute resources to units with higher costs of instruction. While these institutions effectively use weighted credit hours, other institutions that tried this approach found that it weakens models' transparency and spurs debates over the appropriate credit hour weightings.

Institutions use short-term subvention payments to acclimate units to decentralized models.

All institutions that moved to more decentralized models in the past 5 years chose to use some form of subvention to orient units to the new models. Most of these institutions used "hold harmless funding" to ensure units received at least as much funding in the first few years of model implementation as they did under the old model. Alternatively, two institutions used a learning year before their new models went live; during that time, units received reports showing how much funding they would have received if the new budget had gone live that year. Both options allow units to acclimate to a new model without immediately affecting the amount of funding they receive.

APPENDIX E: UNIVERSITY OF DELAWARE BUDGET MODEL'S KEY METRICS | DEFINITIONS

There are three primary metrics used throughout the UD budget model to formulaically calculate revenue allocations to colleges, departments, institutes/centers, and faculty:

- **Student head count by major:** This metric measures total number of majors in a given college, accounting for dual and triple majors, and is computed by the following:
 - Prorated student head count between academic plans if there is more than one academic plan (maximum of three academic plans).
 - Prorated student head counts rolled up to the department that owns the academic plan.
 - Prorated student head counts further rolled up to the college that owns the department.
- **Subject by course ownership:** This metric measures total SCH delivered by a college and is computed by the following:
 - Credit hours taken by students by term.
 - Credit hours rolled up to the department that owns the course.
 - Credit hours further rolled up to the college that owns the department.
- **IDOR:** This metric measures total SCH delivered by a department where the responsibility for paying the instructor lies.

APPENDIX F: BUDGETING AT THE DEPARTMENT LEVEL

There are three main sources of funding for an individual department. The first is *predictable-base funding*. This predictable-base allocation is determined using department-level metrics and historical spending. Deans and CBOs will analyze historical department spending, recognizing that expenses may not have been appropriately transacted at the department level in the past.

The second source of funding is the formulaic distribution of *activity-based funding*. The exception to this formulaic distribution is undergraduate tuition. Departments have little or no control over undergraduate tuition; therefore, this funding is only distributed formulaically at the college level. Activity-based funding includes F&A and graduate tuition revenue over the predictable base as well as special sessions tuition revenue. These distributions are strictly formulaic, and the eventual goal is to allocate a percentage of the revenue streams to departments based on the revenue generated within their area.

The third and final source of funding is *strategic funding*. In some cases, departments may not generate sufficient income through the allocation of their base and activity alone to cover their costs. This is especially true for departments in which the cost of instruction is high. To compensate for this imbalance, the dean can evaluate how funds may be allocated to departments.

REFERENCES

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