

Building a New Budget Model for the University of Wisconsin-Madison

Budget Model Development Committee

Report to Chancellor Rebecca Blank

September 2014



Executive Summary

University of Wisconsin-Madison Chancellor Rebecca Blank and the University Committee jointly appointed the Budget Model Development Committee of faculty, staff and students to recommend options for a new campus budget model. The committee focused its work on the development and implementation of a new model that will support decisions about resource allocation to help fulfill UW-Madison's long-term strategy and mission.

The committee's work was based on numerous principles, including the following:

- Make budget allocations to campus units more transparent;
- Allow resources to shift based on objective measures of activity, yet avoid large budget shifts;
- Provide incentives for innovation and entrepreneurial activities aligned with campus priorities.

The new budget model addresses allocation of resources to schools and colleges, but not resource allocations within the schools and colleges, leaving those decisions to the deans.

The committee reviewed the current campus budget allocation model, focusing on three basic revenue streams: general purpose revenue (GPR from state tax support), student tuition, and federal indirect cost reimbursement. To improve budget practices the committee agreed it was important to use metrics to inform annual budget decisions – metrics that are clear, standard and consistently applied in the allocation of revenue streams. The metrics recommended by the committee are systematically available, reliable and collected for other operational purposes.

The committee identified two measures most appropriate to use for the purpose of allocating GPR and tuition for instructional activity: unit of enrollment and unit of instruction. The committee concluded that degree home (also referred to as Primary Academic Group or PAG) is the most appropriate metric for unit of enrollment and that Credits Follow Instructor (CFI) is the most appropriate metric for unit of instruction. The composite metric would use a weighting of 20% for degree home and 80% for CFI. The committee determined that professional student programs already operate under a formal budget model, which should continue, and that such programs should not be subject to 80-20 methodology. The committee also recommends that program-revenue based instruction and Summer Session not be part of the allocation process at this time, but should be evaluated in the future.

A robust metric already exists for the allocation of indirect cost return in the annual Capital Exercise (Fund 150) to cover institutional costs that support research activity, and the committee recommended modest changes to the current formula. Specifically, the committee proposes that Capital Exercise funds be distributed to schools and colleges based on expenditures and indirect costs, in equal portions, using the prior two years of research activity. In addition to using the above research metric for allocation of Capital Exercise funds, the committee proposes that it also be used for allocation of indirect cost budgeted in the general fund (Fund 101). The committee's rationale is that the goals of the two funding sources are the same: to foster research excellence and support research infrastructure.

The committee's recommendations focus on establishing objective, transparent metrics to drive long-term resource allocation decisions that align with the institution's core missions. However, it is clear that the instructional and research metrics cannot function as the sole drivers of the entire budget. The committee recognizes that the new budget model must also have flexibility to generate resources to be used at the discretion of campus leadership to invest in strategic initiatives.

Introduction

In response to recommendations of the Budget Model Review Committee released in January 2014, University of Wisconsin-Madison Chancellor Rebecca Blank and the University Committee jointly appointed the Budget Model Development Committee to recommend options for a new campus budget model. The overarching goal is to develop and implement a new budget model that supports decisions about resource allocation which, in turn, lead to outcomes that are consistent with campus strategy and mission. This report summarizes the work of the Budget Model Development Committee (Development Committee hereafter) over the last five months and 20 meetings, and in particular, describes those points of consensus reached by the committee with respect to key aspects of a proposed budget model.

This document summarizes the Development Committee's deliberations and the consensus achieved in regard to metrics that should be used in a proposed budget model to reflect instructional and research activity. According to the committee's charge, the new model should address the allocation of resources to schools and colleges, but not resource allocation within those units. Deans remain the primary arbiters of school and college strategy.

The important points on which the committee reached consensus are described here to inform subsequent campus discussions, and eventually to inform decisions by Chancellor Blank and other senior leaders about implementation of a new budget model. Issues for this broader campus discussion may include whether to extend the model to other campus units (e.g., the General Library System) and the timeline for implementation. This is intended to be a multi-year process. Implementation at peer institutions that have transitioned to new budget models typically has been on a three- to five-year timeline.

Background

The University of Wisconsin-Madison has followed the same approach to the allocation of its base budget for more than 40 years, i.e., since the UW System merger in 1972-73. At this critical juncture in UW-Madison's history, when we are faced with continual changes in our revenue streams and ongoing innovations in our educational and research programs, it is necessary for the institution to re-evaluate its budget practices.

In September 2013, Chancellor Blank charged the Budget Model Review Committee (hereafter Review Committee), made up of faculty, staff and students, with studying the current campus budget allocation model and generating a report on the possibilities of selecting and implementing a new budget model for UW-Madison. In January 2014, the Review Committee completed a white paper establishing a case for change in our budget model. The committee supported adopting a new model based on a set of principles that includes the following:

- make allocations to campus units more transparent,
- allow resources to shift based on objective measures of activity, but avoid large or discontinuous shifts in budget allocations, and
- provide incentives for innovation and entrepreneurial activities aligned with campus priorities.

The Review Committee also recommended that the Chancellor create and charge a cross-campus committee to conduct a more detailed review of activity-based budget allocation models at comparable universities, propose such a model for UW-Madison, and recommend action steps for transitioning to a new model. The Chancellor accepted that committee's recommendation, and in March 2014 she and the University Committee jointly appointed the Development Committee to undertake this work. The Development Committee is an advisory committee to the Chancellor and Vice Chancellor for Finance and Administration. The committee includes four academic deans, seven members of the Review Committee, and members nominated by faculty, academic staff, classified staff and student governance groups. The Chancellor's formal charge to the Development Committee appears in Appendix 1, and committee membership in Appendix 2. The white paper written by the Review Committee was foundational to the work of the Development Committee, since it made the case for change and proposed an action plan; therefore, that white paper appears as Appendix 8.

Committee Deliberations

The Chancellor presented the Development Committee's charge at its first meeting on March 28, 2014, and met again with the Committee on July 23, 2014. The Development Committee's early meetings were devoted to establishing shared values and operational ground rules to guide its work. With respect to ground rules, among others¹, each committee member agreed to:

- represent the collective interest of the university in final recommendations,
- undertake discussions that were inclusive, transparent, and would inspire trust in one another and with other campus units, and
- commit to the timeline and approach to completing work as decided by the committee.

Early meetings also were devoted to an in-depth analysis and "unpacking" of the committee charge and consensus development around shared values to guide the committee's work.

Key values elements, when considering alternative budget allocations, include (among others):

- importance of all mission elements – teaching, research, outreach/service;
- consideration of collaboration in both teaching and research;
- respect for diversity;
- importance of mentoring and advising for the teaching mission;
- supporting a balance between learning for exploration and general knowledge acquisition and preparing for specific outcomes (e.g., careers);
- focus on excellence in all our missions with respect to their impact on instruction. That is, high-quality research and other scholarship activities contribute to an effective educational environment and strong programs. More simply, research matters to high-quality teaching and superior programs.

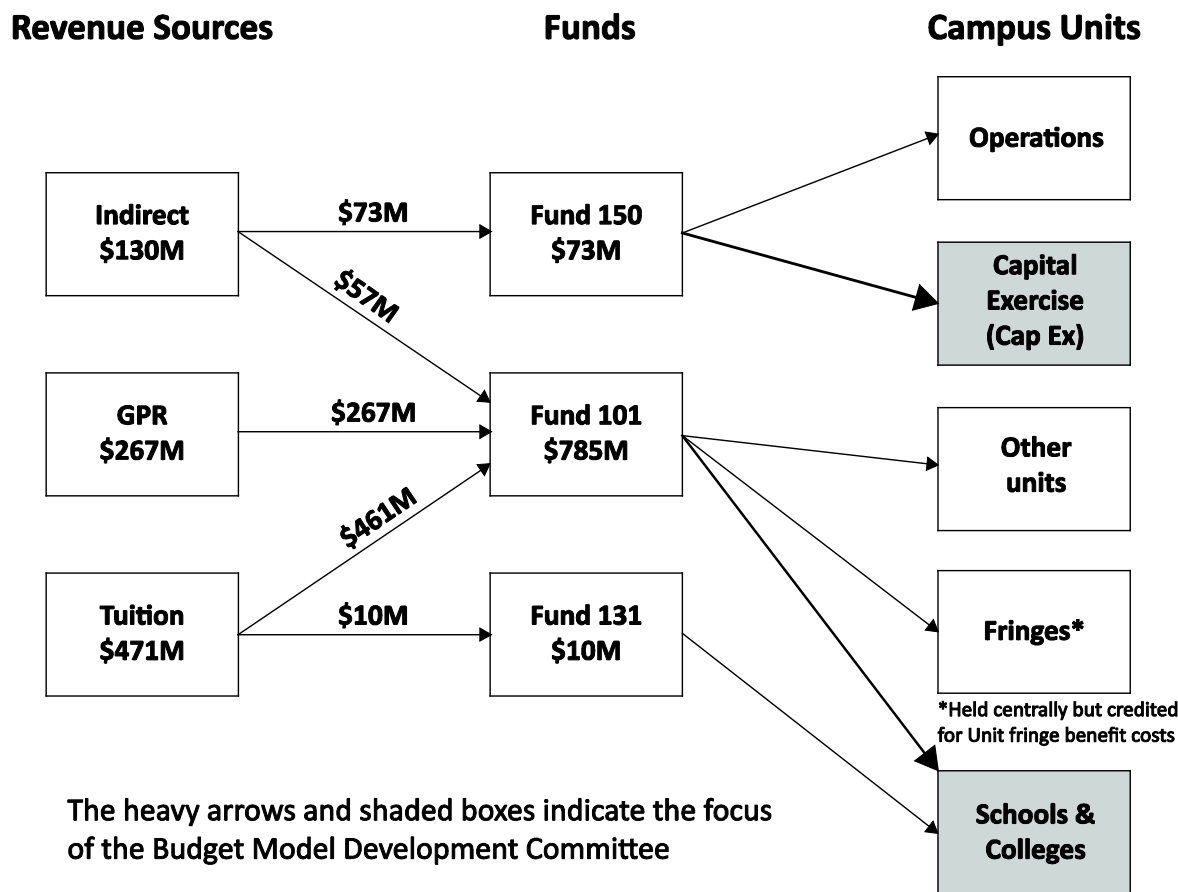
¹ The complete list of committee operating rules is provided in Appendix 3.

For the most part, this set of values, while independently developed by the Development Committee, is consistent with similar elements generated by the predecessor Review Committee.²

Current State and Scope of Review

During an extensive deliberative process, the committee considered and discussed documents from peer institutions as well as available literature that reviewed and critiqued budget models at public and private universities. The committee then turned its attention to the complexities of the current campus budget allocation model, focusing on three basic revenue streams: general purpose revenue or GPR (state tax support) budgeted in the general fund, student tuition budgeted in the general fund, and federal indirect cost reimbursement. As depicted in the diagram below, UW-Madison's general fund (Fund 101) is a combination of those revenue sources, although not all tuition or indirect cost is budgeted in Fund 101. Specific information regarding each of these revenue streams is provided below.

2013-14 Funds Flow



² The complete list is presented in Appendix 4. While there was some overlap in committee membership between the review and development committees (7 of the 17 members served on both committees), the committee felt this process was important to ensure that all on the Development Committee were in agreement on these values.

- **General Purpose Revenue (GPR):** In 2013-14, approximately \$267 million dollars of state tax support was budgeted in the general fund (Fund 101). This excludes state tax support provided for debt service and other state tax support budgeted for specific purposes, such as utilities and minority and disadvantaged programs.
- **Tuition:** In 2013-14, approximately \$461 million of student tuition was budgeted in the general fund (Fund 101). This excludes segregated student fee revenue. It also excludes approximately \$10 million of instructional programming that directly collects paid tuition. Examples include the Evening MBA Program, the Masters of Biotechnology Program, and many of the new programs recently created under the Educational Innovations initiative. Such programs are often referred to as Fund 131 programs.
- **Federal Indirect Costs Reimbursement:** In 2013-14, approximately \$57 million of federal indirect cost reimbursement was budgeted in the general fund (Fund 101). Of that amount, approximately \$29 million excluding fringe benefits has been permanently allocated to schools/colleges in the form of Fund 101 budget authority to reflect their “research productivity.” In addition, approximately \$30 million was distributed to schools/colleges outside the general fund (Fund 150) through the annual Capital Exercise (For more detail on the Capital Exercise, see the Research and Sponsored Activity Metrics section starting on Page 12). The remainder of the funding is fully committed to ongoing operations that support the research enterprise and to cover required payments and assessments associated with sponsored research activity.

It should be noted that the fringe benefits budget for the general fund fell outside the committee’s scope. State of Wisconsin law and budgetary policies and procedures treat fringe benefits as a separate budgetary category and include distinct rules that prevent UW-Madison (or any other UW System campus or state agency) from altering its historic approach to budgeting fringe benefits as a central budget line.

Historically, UW-Madison has employed what might be best described as a hybrid incremental budget model for the general fund (Fund 101). For a typical school/college, the annual budget development process essentially begins with the prior year budget amount which is then supplemented for the standard compensation plan approved by the state, reduced by any budget reductions required by the state, and occasionally either supplemented or reduced based on decisions made pursuant to a budget reallocation exercise. In addition, a typical school/college general fund (Fund 101) may occasionally be supplemented to fund specific programs or new initiatives approved by the state in the biennial budget.

Historically, there have been no clear, consistent, standard metrics used to reapportion the general fund budget annually based on measures of activity. One implication of the lack of metric-based resource allocation is that it does not facilitate or establish a fluid or “real-time” feedback mechanism to align resources with systemic changes in higher education. For example, the UW-Madison Office of Academic Planning and Institutional Research’s recent report on trends in instructional activity in Science,

Technology, Engineering and Mathematics (STEM) disciplines shows that there has been a 19% increase in student credit hours in STEM subjects since 1999-2000, and junior/senior enrollment in STEM majors has increased 44% over the same period. However, there has been no systematic realignment of budget resources between schools and colleges over that period to align with this fundamental and substantial shift in student demand.

Excluding tuition differentials and other legislatively approved budget increases for specific initiatives, essentially all tuition increases since UW System merger have been approved for pay plan and fringe benefits increases for all employees (and other cost-to-continue items) and to offset budget reductions for all units. That is, in most years the state legislature has allocated tuition increases in the exact amount to cover necessary expenses, and these increases have not provided any new funds for the university. For example, in 2002-03 resident undergraduate academic year tuition was \$3,854; in 2013-14, it was \$9,273. If \$1,000 of current tuition for the Madison Initiative for Undergraduates (MIU) is excluded, the net change over that time was \$4,419. Of that amount, approximately \$2,558 (58%) was to offset GPR reductions for all units, and the remaining \$1,861 was for pay plan and fringe benefits increases (and other cost-to-continue items).

Excluding tuition differentials, there is no historical information on tuition allocations to units similar to the historical documentation that is available for general fund (Fund 101) federal indirect cost reimbursement. Since the UW System merger, the primary driver in changes to unit general fund (Fund 101) budgets has been the state compensation plan. Just as compensation plan allocations to UW-Madison are treated on a combined GPR/tuition basis by the state and UW System, UW-Madison's compensation plan allocations to units are treated on a combined GPR/tuition basis.

Other major factors which explain changes to unit general fund (Fund 101) budgets over time are budget reallocations and state-imposed reductions, both of which are treated on a combined GPR/tuition basis. Note that state-imposed budget reductions are also treated on a combined GPR/tuition basis by the Board of Regents and UW System Administration. The state uses the same approach when establishing budget reductions.

Holding compensation plans and state-imposed budget reductions constant, the extent to which current unit GPR/tuition budgets vary from their relative distribution at the time of the UW System merger reflects the collective judgment of institutional leadership over the past 40 years as articulated by reallocation decisions. Given this long time frame, there is no practical approach or framework that would be endorsed by all stakeholders to determine whether current relative unit GPR/tuition budgets are "right-sized," and equally, whether leadership decisions over the past 40 years were sound. The committee acknowledges that the current allocation is very important to schools and colleges, whether it can be justified by some outside framework or not. Hence, any potential changes must not cause too much initial disruption to the critical operations of schools and colleges. This challenge is one of many to be expected in the process of moving to a new campus budget model.

Approaches to Building a Budget Model

Given the current landscape of funding in higher education, it is clear that UW-Madison can improve its budget practices by introducing metrics to inform annual budgetary decision-making—metrics that are clear, standardized and consistently applied in the allocation of various revenue streams with the goal of incentivizing or rewarding activity that objectively reflects the institution’s core missions and supports strategic change. The Development Committee agrees with the Review Committee that it is feasible to create and implement a campus model that is activity-based, adhering to the principles articulated by Chancellor Blank and the Budget Model Review Committee (page 4 of this report).

Metrics

The white paper issued in January by the Review Committee as well as the charge to the Development Committee called for a model based on a limited number of measures of research and instructional activity as a basis for budget allocations. Transparency and simplicity were identified as core values associated with the selection of these metrics. Consequently, a substantial amount of committee discussion focused on this issue. Our values discussion helped us to isolate readily available metrics which can be used as proxy measures for instructional and research activity. The committee recognizes that there are other highly valued activities on our campus; the committee’s focus on instruction and research does not mean that other activities are less valued. Rather, the selection of metrics reflecting instructional and research activity allows metrics to be directly aligned with the source of the revenue streams to be reallocated.

Further, limiting the number of metrics in a new model is clearly necessary. To do otherwise is to risk creating a new system which violates the overall goal of simplicity and potentially could replicate the current incremental model. Implementing a model with an overly complex set of metrics reduces transparency, and clouds understanding the effects of “moving the bar.” Finally, information from our peer institutions suggested that complex models inevitably resulted in high degrees of correlation among various metrics, thus leading decision-makers to simplify in order to support more transparency in resource allocation.

Having agreed to focus on metrics reflecting instructional and research activity, the Development Committee then considered criteria with which to evaluate potential metrics, and eventually identified those best suited for revenue attribution.

Criteria Used to Evaluate Metrics

The following criteria for metrics in the new budget model were discussed and considered essential. Metrics reflecting instructional and research activity should be:

- Supportive of a transparent, flexible, simple and easily understood budget development process;
- Relevant and serve as an “objective measure of activity” and, in this case, useful for “moving resources around”;

- Relevant and functional at the school/college level; also useful at the department level;
- Credible and accepted, ideally with a long history; not easily dismissed on the basis of exceptions and outliers;
- Available in a timely way in relation to an annual budget decision-making cycle;
- Based on underlying data sets that are:
 - a. accessible to schools/colleges and available in a format that analysts can develop for wider use.
 - b. already collected for other purposes, that are accurate, reliable, robust and systematically available with a high degree of fidelity and completeness.
 - c. stored in a UW-Madison enterprise system and properly curated (i.e., do not rely on shadow systems).

Instructional Metrics

In order to determine which metrics are most appropriate to use as a proxy for instructional activity for the purpose of resource allocation, the committee first developed a working knowledge of various approaches to characterize unit of enrollment and unit of instruction. After working through definitions, examples, and in-depth discussions of available metrics in these two categories over the course of several meetings, the committee ultimately concluded that degree home (also referred to as Primary Academic Group) is the most appropriate metric for unit of enrollment and that Credits Follow Instructor (CFI) is the most appropriate metric for unit of instruction. These metrics meet most, if not all, of the criteria noted above.

Metrics for Unit of Enrollment. The committee explored definitions and operational considerations surrounding two different metrics which could take into account where advising and other student-support services take place. These two metrics, degree home and Academic Group-Major FTE (MAG), were discussed in depth and are covered in more detail in Appendix 5. Each degree-seeking student has a single degree home, which is the school/college that serves as the academic home of a student's degree program. MAG assigns students to a school/college on the basis of their declared major(s). It should be noted that other metrics for enrollment were evaluated, but were not considered sufficiently robust to be recommended.

Based on review of the enrollment data comparing these two metrics over a ten-year period and by student level, the committee concluded that degree home and MAG were highly correlated. Other factors taken into account in the committee's discussion include the following:

- 37% of enrolled undergraduates had no declared major, but all had a degree home;
- how students declare and apply to majors varies considerably among the schools/colleges;
- there is a higher level of complexity involved in calculating major FTEs for students with multiple majors;
- using degree home as the measure of enrollment was thought to be less likely to result in manipulated outcomes ("gaming the system") than would be the case with MAG; for

example, the use of MAG as a metric in a new budget model might inappropriately incentivize units to encourage students to declare a second or third major.

The committee's lengthy and detailed discussion of various approaches to measuring unit of enrollment was extremely valuable in that it not only educated members about the advantages and disadvantages of potential metrics, but also reinforced the importance of simplicity and transparency in a new budget model. These wide-ranging discussions ultimately led to consensus that degree home should be chosen as the measure of unit of enrollment.³

Metrics for Unit of Instruction. The committee discussed two potential metrics for unit of instruction, Credits Follow Department (CFD) and Credits Follow Instructor (CFI). CFD attributes course credits to an academic unit based on "ownership" of a curricular subject, without regard to departmental affiliation of the instructor. With cross-listed courses, attribution of credits in CFD is based on the department through which the student registers. In contrast, CFI attributes the credits to the academic unit that pays the salary of the instructor based on the payroll system records; when course instructors are not paid by any instructional unit, CFI attributes the credits to the unit offering the course.

The committee concluded that Credits Follow Instructor (CFI) was the only viable choice for attribution of credit hours. Although simpler to calculate, Credits Follow Department (CFD) attributes course credits without regard to where instructional salary is paid. In the case of cross-listed courses, attribution of credits in CFD is arbitrary and subject to manipulation. There was strong consensus that the significant value and meaning of CFI outweighs the challenges posed by the complexity of the underlying algorithm; this algorithm (Appendix 6) was reviewed and endorsed by the committee. With the CFI approach, the alignment of credit hours with paid salary is particularly relevant for the purpose of resource allocation. Further, CFI supports the value of cross-unit exchange of instructional support. Both CFI and CFD are covered in detail in appendices to this report, including a primer on CFI with examples of various scenarios for credit attribution.

Relative weighting of CFI and Degree Home. The question of the relative weighting between these two metrics, of CFI and degree home, in determining revenue apportionment was discussed at considerable length. Experiences reported from peer institutions, including reports on changes in approach over time, informed our decision to recommend a weighting of 80% for CFI and 20% for degree home as a starting point for the new budget model. As summarized in Responsibility Center Management (Curry, Laws and Strauss 2013), a reference used as a resource by the committee:

³ The committee discussed student enrollment in certificate programs; however, given current inconsistency in practice across campus on recording enrollment in certificate programs, we concluded this would be a very weak metric. Enrollment in certificate programs will be captured adequately through the credit metric, reinforcing the decision to weight credits more heavily than degree home. Degrees conferred were discussed and evaluated; however, this metric does not satisfy the feature of being available in a timely way, i.e., not dynamic enough given 4-5 year time to degree.

“Since the school providing students with courses incurs the preponderances of costs, credit hours generated should be the primary driver of tuition allocations. The typical split is 80% based on credit hours and 20% based on locus of major. ”⁴

The Development Committee reviewed five-year trends in CFI and degree home across schools and colleges at UW-Madison , as well as distribution models using 80-20 and 50-50 weighting between CFI and degree home. These analyses focused on undergraduate students and graduate/professional students, in an effort to determine whether all students could be aggregated. Ultimately, the committee found no compelling reason to treat undergraduate and graduate students differently in terms of the use of these metrics in a budget model and agreed to recommend an 80-20 weighting of CFI and degree home for both student populations. However, students in professional programs constitute a different case, and the suitability of this weighting approach for this population will be explored further as the new budget model is implemented.

For purposes of calculating the instructional metric based on the 80-20 weighting, the committee agreed that multi-year data should be used. Similar to the discussion regarding research metrics below, the committee recommends using data for the prior two years, with the most recent year weighted at twice the value of the prior year. This approach will help mitigate the impacts of changes in the underlying data, while still rewarding and incentivizing credit production and enrollments.

Additional Weighting Factors. The committee discussed a number of secondary weighting factors that could be used within the 80-20 construct. The two primary questions revolved around basing the formula on paid or assessed tuition and measures of instructional intensity.

Regarding the first issue, the committee spent several meetings discussing the implications of using paid versus assessed tuition and reviewing alternate models based on actual data for UW-Madison. Some students, primarily Ph.D. (research) graduate students, have their tuition waived in the form of tuition remissions based on their appointments to graduate assistant positions (Teaching Assistants, Research Assistants, Project/Program Assistants). The committee noted that metrics for graduate assistants are already reflected in the instructional model and research model (discussed below), based on their credit production for classes taught or stipends paid on research. Using assessed tuition would, in a sense, double count such individuals. From that perspective, the committee agreed that the use of paid tuition is a better approach. Further reinforcing the idea that paid tuition is the preferable approach is the fact that paid tuition better reflects the revenue generated by the university and the resources that are actually included in the budget.

Regarding potential measures of instructional intensity, the committee discussed the notion that some types of instruction may be inherently more costly than others. An example would be a laboratory course, which as national benchmark data show, is more expensive than classroom instruction. For this

⁴ John R. Curry, Andrew L. Laws, Jon C. Strauss, *Responsibility Center Management, A Guide to Balancing Academic Entrepreneurship with Fiscal Responsibility* (NACUBO, 2013), 20-21.

reason, many of our peer institutions assess laboratory course fees. (Board of Regent policy prohibits this approach in the UW System.) Another example mentioned by committee members relates to graduate student instruction and mentoring, which may not benefit from economies of scale that apply to some undergraduate courses.

Notwithstanding seemingly reasonable examples like those cited above, the committee agreed that intensity should not be introduced as a secondary weighting factor for four basic reasons: 1) The concept of instructional intensity is not easily or clearly definable. 2) We have no valid, systematic, reliable way to classify the intensity of courses. For example, course number is not an accurate measure of intensity. 3) Some committee members made the astute observation that such an approach could distort the economy of the instructional portfolio campus-wide and potentially lead to outcomes that are not best for students (e.g., insufficient availability of low-intensity courses). 4) Based on how students are assessed and what they pay for, “a credit is a credit.”

Professional Student Programs. This category includes the professional programs in the Schools of Medicine and Public Health (MD), Law (JD, SJD), Pharmacy (PharmD) and Veterinary Medicine (DVM). However, it does not include graduate programs (Ph.D.-track or terminal master’s degrees) within those schools. The committee spent considerable time evaluating the potential treatment of professional programs in a new budget model. The committee concluded that a new budget model (as represented by the 80-20 formula) should focus on undergraduate and graduate student populations, which generate well over 80% of the tuition UW-Madison collects. As has been the case for over a decade, professional programs should be managed through a separate process to incentivize their instructional activity and hold them accountable for their enrollments—both for potential enrollment growth and decline. Undergraduate and graduate programs should not directly benefit or be penalized for enrollment swings or changes in tuition pricing in professional programs. To be clear, the committee recognizes that professional programs have been subject to a formal budget model for over a decade. The approach should continue and should be clearly articulated and transparent. In a larger sense, the committee recommends that professional programs should be part of the new budget approach at UW-Madison, but that they should be treated differently than undergraduate and graduate programs.

Program Revenue Based Instruction. As discussed in the “Current State and Scope of Review” section of this report, UW-Madison conducts approximately \$10 million of instructional programming (Fund 131 programs) that directly collects paid tuition. Credits and enrollments in such programs are already fully rewarded with direct tuition return to schools and colleges under the current model. Hence, the committee determined credits and enrollments for such programs should be excluded from the 80-20 formula. However, the committee recommends that the current model for such Fund 131 programs be reviewed in the future to evaluate whether a policy change is warranted under our new budget framework.

Summer Session. The analysis conducted by the committee was limited to academic-year instructional metrics and excluded Summer Session activity. Some metrics recommended by the committee are not currently available for Summer Session. Thus, the committee reached no conclusions or consensus on

how Summer Session should be treated in a new budget model. The committee recommends that a future group be tasked specifically with reviewing the Summer Session budget model.

GPR and Tuition. The committee thoroughly evaluated a fundamental question over the course of its deliberations on instructional metrics: What part of the budget should be subject to the 80-20 formula? While the tuition component of the budget might appear to be the obvious answer, two facts beyond dispute suggest a different concept best fits the external budgetary framework in which UW-Madison has operated and will continue to operate for the foreseeable future.

- As discussed in the “Current State and Scope of Review” section of this report, state funding provided to the university has taken the form primarily of pay plan and fringe benefits increases for all state-funded (Fund 101) employees. Associated budgetary increases have typically consisted of a GPR and tuition component. Thus, both GPR and tuition reside in all Fund 101 budget units, and conversely not all tuition resides only in academic units.
- From the state’s and Board of Regents’ perspectives, instructional programming certainly includes a GPR component – the state contribution to match tuition to provide courses, credits, degrees, etc. Thus, academic unit budgets are not limited to tuition revenue but also include state tax support.

Based on these considerations, the committee determined that the portion of the budget subject to the budget model formula should include tuition and GPR and that all Fund 101 units must be viewed as having both GPR and tuition included in their budgets.

Research and Sponsored Activity Metrics

A robust metric for research and sponsored activity already exists on campus as the basis for the allocation of indirect cost return (Fund 150, Capital Exercise), and the committee focused its attention on the potential utility of this metric in the context of the budget model.

Indirect cost dollars currently flow to schools and colleges through two paths. First, the annual Capital Exercise (Fund 150), which amounted to \$29.6 million in FY 2013-14, has been based on a formula that is the sum of total research expenditures and indirect costs generated during the prior three-year period. Second, a portion of the Fund 101 budgets provided to schools and colleges is derived from indirect costs. The practice is historically based, but related to past Capital Exercise allocations. Currently, the amount of funds flowing through this path is approximately equal in magnitude to funds allocated through the Capital Exercise.

The Development Committee proposes a revision of the formula used for the Capital Exercise as a primary metric for research and sponsored activity. Specifically, equal portions of the Capital Exercise funds should be distributed to schools and colleges based on total research expenditures and on indirect costs generated. Expenditures and indirect costs for the prior two years will be considered, weighting the most recent year at twice the value of the year before. The metric has several desirable features to be considered in the budget model. It is an objective measure of research activity, is based on data that

are systematically available, reliable, and collected for other operational reasons, and has a long history of use within the institution.

This change to the Capital Exercise formula has several advantages as a research and sponsored activity metric. It provides a greater incentive to seek extramural funding from agencies that provide indirect costs than the current model. However, by using total research expenditures to allocate half of the funds, the model also recognizes that important scholarly activity on campus may be largely supported by extramural sources that provide limited or no indirect costs. Using the prior two years of data allows for some smoothing of the inevitable fluctuations in extramural funding while maintaining an emphasis on recent activity.

In addition to using the above research metric for allocation of Capital Exercise funds, the committee proposes that it also be used for allocation of indirect cost-derived Fund 101 dollars to schools and colleges. The rationale for this suggestion is that the goals of the two funding sources are the same. Both funding sources are intended to foster research excellence and support research infrastructure.

An important institutional goal is to facilitate collaborative, multi-disciplinary research on campus. Thus, it is appropriate to consider whether the use of this metric would encourage collaboration in research across school and college lines by properly attributing credit for such research activities. The committee's discussion of this issue was informed by a subcommittee on crediting collaborative grants (Appendix 7).

The committee identified two broad cases for consideration. The first case includes grants with two or more principal investigators (PIs), or a PI and co-investigators, who reside in different schools or colleges. In this case, it is not difficult to insure that both research expenditures and indirect costs are credited to the appropriate schools or colleges. For example, consider a multiple-PI grant involving Prof. X from college A and Prof. Y from school B. At the time of the award, fund accounts are established that allow both college A and school B to charge expenditures. Expenditures in Prof. X's laboratory are allocated to college A and those for Prof. Y are allocated to school B. A change in the accounting system made a decade ago insures that indirect costs are appropriately attributed at the time of expenditure in each school/college. Thus, college A gets appropriate credit for expenditures and indirect costs related to the activity of Prof. X and school B gets the credit for Prof. Y's activity. The committee concluded that the existing mechanism insures that proposed research activity metric will encourage, and not inhibit, collaborative research across school and college lines when investigators are drawn from multiple schools or colleges, and they set up separate accounts.

The second, and more complex case, involves the research centers on campus. The impact of the centers on our research activity is substantial. The campus has more than 200 centers currently registered in the Provost's Office; during the most recent complete year, \$160 million in awards were made to 14 of the larger centers on campus.

Centers are highly diverse in reporting and operating structures, number and affiliation of members, and level of extramural research support. However, most share the common goal of establishing and supporting communities of scholars that transcend traditional disciplinary boundaries. By design, many

centers include faculty from multiple schools and colleges, support research activity by faculty who have laboratories in space controlled by the center as well as faculty who reside in school/college space, and are the locus of award for at least some of the extramural research support of center members.

Given the diversity of centers, it is not surprising that there is a variety of approaches to sharing indirect cost return between a center's home school or college, and the other schools or colleges that contribute faculty activity to the center. Here the committee describes two approaches, not to advocate for either, but merely to illustrate the existing variation. For example, the Wisconsin Energy Institute, administered by the College of Engineering, distributes 10% of the indirect cost return to the home schools or colleges of faculty participating in multi-investigator grants with greater than \$1 million in annual direct costs. Members of the Waisman Center, located within the Office of the Vice Chancellor for Research and Graduate Education, who reside in center space are expected to submit and administer their extramural grants through the center. Faculty salaries associated with these grants are routed through their home school or college, providing direct credit for that expenditure and associated indirect costs.

In both of these examples, the center has established rules regarding which grants may be submitted through the center and approaches to insure that a portion of the indirect cost return benefits the home school or college of the participating faculty, and these processes are relatively transparent. However, other centers do not have transparent processes in place, and decisions about sharing indirect cost return are made, or appear to be made, on an *ad hoc* basis.

The Development Committee recommends that policies be put in place to insure that the home schools or colleges of faculty receive appropriate credit for research activity within centers. This important policy issue must be addressed at the campus level for two reasons: first, it is necessary in order to foster multi-disciplinary research across school and college lines, and second, issues around sharing of indirect cost dollars must be resolved in order for indirect cost dollars and expenditures to function optimally as the research metrics in a new campus budget model.

Discretionary Reinvestment

The preceding committee recommendations focus on establishing objective, transparent metrics to drive resource allocation decisions to incentivize measurable activities that align with the institution's core missions. However, it is clear that the instructional and research metrics endorsed by the committee cannot function as the sole drivers of the entire budget. The committee recognizes that the new budget model must have the flexibility to generate resources to be used at the discretion of campus leadership to invest in new strategic initiatives or to address important campus needs in a timely manner. These initiatives may not be adequately captured by the instructional and/or research metrics adopted by the committee.

Returning to the discussion in the "Current State and Scope of Review" section of this paper, it is certain that both GPR and tuition reside in the budgets of all Fund 101 units. The committee recommends that any discretionary aspect of the new budget model be viewed as applying to both GPR and tuition. This approach should apply to all budget units – both academic and non-academic units.

Conclusion

The Budget Model Development Committee reached strong consensus regarding the recommended instructional and research metrics presented in this report. The committee's recommendations are consistent with those presented in the Budget Model Review Committee January 2014 white paper and with the overarching goals of transparency and simplicity in a new campus budget model.

The committee's recommendations are:

- Instructional resources should be allocated to schools and colleges based on each unit's proportion of total credit hours provided. This provides a direct mechanism to support teaching activities. Eighty percent of the formula should be based on the Credits Follow Instructor metric.
- Additionally, instructional resources should be allocated to schools and colleges based on each unit's proportion of total students enrolled. This provides a direct mechanism to support advising and other student-support activities. Twenty percent of the formula for instructional resources should be based on the unit of enrollment metric.
- Recognizing both credit hours and units of enrollment may experience temporary volatility, the committee recommends that teaching resources be allocated on a two-year moving average, double weighting the most recent year.
- Indirect costs derived from research and sponsored programs remain a significant source of revenue that already follow an activity-related budget formula. The committee recommends expanding the formula to a broader set of funds. The indirect cost allocation formula should be shifted to a two-year moving average, with double weight on the most recent year, and the allocation should align with the annual budget cycle. Finally, each school and college's share of indirect costs should be based on the equal weighting of expenditures and indirect costs, providing an incentive for collecting full indirect charges on sponsored projects.

The metrics recommended for use in the allocation formulas are systematically available, reliable, and are collected for other operational purposes. While the committee acknowledges there will be a need for procedural and policy oversight during the transition to a new budget model, these recommendations are consistent with the goal of transparency and simplicity.

The committee notes there are a number of issues that deserve deeper examination. For example, despite detailed discussions, the committee decided that program-revenue based instruction and Summer Session should not be part of the allocation process at this time, but should be evaluated in the future.

Consistent with the Chancellor's charge, the committee affirms the notion that the budget model should not result in significant shifts in resource allocation across schools and colleges in the next several years. Rather, the intended goal is to move to a more transparent budget allocation system that influences

future behavior and creates incentives for innovation and efficiency in three areas: delivering instruction, supporting student success, and engaging in world-class research.

The committee also recognizes that the new budget model must have flexibility to generate resources to be used at the discretion of campus leadership to invest in new strategic initiatives. The committee recommends that any discretionary aspect of the budget model apply to both GPR and tuition revenue and be applied to units as broadly as possible in a clear and transparent way.

Although the recommendations outlined here provide a solid foundation for the development of a new activity-driven budget model at UW-Madison, much work remains to be done. The committee looks forward to working with Chancellor Blank on sharing these recommendations with the UW-Madison community and leading a robust campus discussion before final decisions are made. The committee also recognizes the transition to the new model will generate a need for closer scrutiny of any unintended consequences of the model, including upholding quality measures and valued activities – such as outreach – not reflected in the model.

As the Budget Model Review Committee noted in its white paper, an effective financial management and budget model is essential for UW-Madison to achieve its mission and vision. The Development Committee is confident that the recommendations in this report lay the groundwork for a more transparent, coherent and sustainable budget plan that will meet the needs of the campus and state for years to come.

Appendix 1: Budget Model Development Committee Charge Document

March 13, 2014

The University of Wisconsin-Madison has followed the same approach to the allocation of its base budget for more than 40 years, since UW System merger in 1972-73. At this critical juncture in UW-Madison's history, when we are faced with ongoing changes in our revenue streams and ongoing innovations in our educational and research programs, it is necessary for the institution to re-evaluate its budget practices. In January 2014, the Budget Model Review Committee of faculty, staff and students delivered a white paper establishing a case for change in our budget model, and recommended the Chancellor create and charge a cross-campus committee to conduct a more detailed review of budget allocation models that incentivize activity, develop a proposed model for UW-Madison and recommend action steps for transitioning to a new model. The Budget Model Development Committee is intended to continue this work.

Based on the recommendations of the Budget Model Review Committee, the Chancellor charges the Budget Model Development Committee to serve as an advisory group to her and the Vice Chancellor for Finance and Administration, working to develop options for a UW-Madison budget model that adheres to the following principles:

- (a) The budget allocation model should recognize, accommodate, and complement external fiscal parameters imposed by the State and the UW System Board of Regents;
- (b) The budget allocation model should align funding with the University's core missions of teaching, research, service, and outreach, creating incentives for the success of the university as a whole, and allowing for investment in new campus-wide initiatives;
- (c) A new budget allocation model should be part of a transparent budget development and allocation process;
- (d) The budget allocation model should support entrepreneurship and innovation that lead to outcomes that are consistent with campus strategy, and mission. Specifically, the budget allocation model should encourage growth in revenue;
- (e) The process for developing, implementing and evaluating a new budget allocation model should acknowledge the tradition of shared governance, recognizing the cultural differences across campus;

- (f) The budget allocation model should allocate resources to schools, colleges, and campus-level units but not allocate resources within those schools, colleges and campus units. Deans and Directors remain the primary arbiters of school, college, and campus unit strategy;
- (g) The budget allocation model must ensure good stewardship of resources, align resources with activity, and be flexible, simple, transparent, and easily understood;
- (h) The new budget system and allocation model should provide the information necessary for sound decisions about the types, amounts, costs, and charges for research and educational programs, and provide sub-unit information that supports decentralized (school and college level) decision-making about instructional programs;
- (i) The budget allocation model should reflect institutional priorities and strategies. In addition to objective metrics, the budget allocation model should allow discretionary distribution of resources to support qualitative measures of success and respond to special needs and new opportunities;
- (j) The budget system and allocation model should provide information to encourage schools, colleges, and campus-level units to increase the quality and innovation of the education they provide. This can be accomplished by allowing units to retain a larger share of the tuition revenue they generate and allowing demand to influence other resource allocations;
- (k) The budget allocation model should be implemented in a way that avoids large or discontinuous shifts in allocations, recognizes the time horizons of existing commitments, and aligns with the pace of operational change;
- (l) Allocations should initially focus on tuition and federal indirect cost reimbursement, and allow for some discretionary funding to be held centrally. As recommended in the January 2014 Budget Model Review Committee white paper, the committee should take a prudent approach by initially focusing only on budget allocations based on measures of activity. The more complex issue of cost allocation for space, centralized services, utilities and other services can be addressed at a later stage of model development.

The tasks this committee should undertake include analysis and recommendations to the Chancellor regarding the following:

- Gather information from selected peer institutions that have transitioned to activity-driven budget models. This includes learning about their current models; understanding the challenges they faced during implementation; and describing the best practices that are aligned with UW-Madison's operating environment and with the guiding principles outlined above;
- Work with the Vice Chancellor for Finance and Administration to consider options for a proposed budget model for UW-Madison. This includes looking at the current distribution of

resources; considering the metrics that should drive changes in resources over time; looking at the appropriate sharing of resources between revenue-generating units and support units; and all other topics which require consideration in the process of developing alternative budget models;

- Evaluate the data accessibility and technological requirements of alternative budget models;
- Consider appropriate ways to transition to a new budget model.

This Committee is an advisory committee to the Chancellor. The VCFA's office, working with this Committee, is expected to develop a detailed framework for a new budget model, and identify the key decisions which will have to be made to produce a final budget model. The breadth and experience of the Committee should make it an effective sounding board to discuss the campus needs and concerns that any new budget model must address. However, it is expected that at some point, once a framework is identified with a variety of options, there will need to be a broader conversations across campus with key stakeholder groups, consistent with the approach of the Budget Model Review Committee and the University's longstanding value of active campus input. The members of the Budget Model Development Committee are expected to be actively involved in these conversations about the new proposed framework with campus governance groups and other stakeholders.

Due to the timing of both UW System and State of Wisconsin budget development cycles, it is important the committee fulfill its charge by the Fall of 2014. The work of this committee will be the next critical step in helping the University create a holistic, coherent, and sustainable budget plan for future years.

The Committee will be chaired by Vice Chancellor Darrell Bazzell. Scott Hildebrand and Alice Gustafson will serve as committee staff. The work of the Committee will be supported by a technical working group including Tim Norris, Jocelyn Milner, and other subject matter experts as needed.

Appendix 2: Committee Membership

Last name	First name	Unit
Bazzell*	Darrell	Vice Chancellor for Finance and Administration
Collins	Michael	School of Human Ecology
Corradini	Michael	College of Engineering
Drinkwater*	Norman	School of Medicine and Public Health
DuCharme	Brett	ASM student representative
Goldman*	Irwin	College of Agricultural & Life Sciences
Gunther*	Anne	College of Letters and Science
Hogan	Camille	School of Medicine and Public Health
May*	Katharyn	School of Nursing
Meyerand	Beth	College of Engineering
Montgomery	James	College of Letters and Science
Mount	Ken	School of Medicine and Public Health
Scholz	Karl	College of Letters and Science
VandenBosch	Kathryn	College of Agricultural & Life Sciences
Wanner	Anja	College of Letters and Science
Warfield*	Terry	School of Business
Underwood*	Julie	School of Education
* Member of the Budget Model Review Committee		
<u>Staff:</u>		
Gustafson	Alice	Office of the Vice Chancellor for Finance and Administration – Administrative Process Redesign
Hildebrand	Scott	Office of the Vice Chancellor for Finance and Administration
Milner	Jocelyn	Academic Planning and Institutional Research
Norris	Tim	Office of the Vice Chancellor for Finance and Administration – Madison Budget Office

Appendix 3: Budget Model Development Committee

Ground Rules (April 2014)

- While committee members were selected to provide their individual perspectives from across campus, each member understands and agrees to represent the collective interest of the university in final recommendations.
- Discussions should be inclusive, transparent, and inspire trust in one another and with other campus units.
- The perspective of each committee members will be valued and respected, and it will be assumed that differing points of view are not meant personally.
- To the extent possible, conflicts and issues should be discussed and resolved openly during committee meetings.
- Silence does not constitute the consent or dissent of a committee member; members are responsible for making their viewpoints known.
- Each member will commit to the timeline and approach decided by the committee.
- Committee members are expected to complete their assigned tasks on time; if a member anticipates missing a deadline, it is that member's responsibility to alert the chair as early as possible.
- "What's said in the room stays in the room" until the committee decides how and when to share it.

Appendix 4: Notes from Values Discussion (Instructional Mission)

May 28, 2014

Values

- One-on-one teaching and mentoring
- Teaching collaboration outside of one's department
- Undergraduate education more than graduate education
- Quality in instruction
- Respect diversity of programs and costs of delivery
- Supporting diverse students
- Providing a fundamental, strong education
- Happy, satisfied adults after graduation
- Balancing learning for exploration and general knowledge acquisition, and preparing for specific outcomes (e.g. careers)
- Supporting administration and advising efforts needed to run strong programs (may not map the same way as credit follows instructor)
- Stay within lanes on course offerings
- Doing a good job with all students (don't just do the easy job; do the hard job)
- Strategic focus for evaluating activities
- Flexibility for students
- Time to degree balanced with time for student exploration
- Value the excellence in all our missions on instruction. That is, great research and other scholarship contribute to an effective educational environment and strong programs. More simply, research matters to high-quality teaching and superior programs.
- Valuing our outreach/public service mission

Appendix 5: Potential Metrics for the Unit of Enrollment

Primary Academic Group (PAG)

Each degree-seeking student has a single primary academic group. It is the school/college of their degree and is responsible for academic policies and coordination of academic and student services for students in the PAG, including academic advising. Each student is enrolled in a single degree; the primary academic group (PAG) is the school/college that serves as the academic home of a student's degree program.

(There are a small number of graduate/clinical doctorate students who pursue two degrees simultaneously; such students will have a PAG that is set by semester based on the degree that they are primarily pursuing that semester).

- Undergraduates choose their degree (thus PAG) and degree choice is connected with major choice. Students in cross-college majors such as Biology elect to pursue a bachelor's degree in either L&S or CALS.
- Students who choose certain majors will be assigned to the PAG of that major's degree program because the degree for the major is highly structured and must adhere to certain requirements: Bachelor of Science in Nursing, Bachelor of Social Work, degrees in Engineering. A student may do an "additional major" in different degree (may be in different or same PAG).
- Graduate and professional students are admitted directly to a specific program/major and their primary academic group (PAG) is that of their program. For graduate students in a cross-college program, their PAG is (generally) that of their major professor.

Academic Group-Major FTE (MAG)

Students are enrolled in majors (academic plans), each of which has a home school/college (academic group). Each student is assigned a total FTE of 1.00 (because they only pay tuition once) and that FTE can be allocated on the basis of major enrollments. Imagine a simple allocation by dividing 1.00 FTE by the number of majors a student is enrolled in. For a student with two majors, each major would count as 0.5 FTE. For a student with three majors each major is counted as 0.33 FTE. In this illustration each major is given the same weight but a different weighting scheme could be devised.

- Enrollment in a major depends on a student taking an action to declare that major. Some majors require an application and have competitive admission. Some majors only require good academic standing.
- Some students may be working on a major without declaring it – 37% of enrolled undergraduates are undeclared. These students are enrolled in a degree and would be allocated 1.0FTE to their PAG.
- Undergraduates sometimes enroll in multiple majors at the same time – 13% of enrolled undergraduates in Fall 2013 (3,921 of 29,504).
- Usually the multiple major combinations are within a single PAG. Only 3.3% (980 of 29,504) of undergraduates enrolled in majors in different schools/colleges.
- A Political Science major would have 1.0 FTE allocated to L&S because they have one L&S major.
- A Biology major would have 1.0 FTE allocated to either CALS or L&S depending on whether they had chosen to pursue a CALS BS degree or an L&S BS degree.
- A BBA student with majors in Business: Management and Business: Marketing would be allocated 0.5 FTE in each major, and that would sum to 1.0 FTE allocated to the School of Business.
- A Bachelor of Social Work major with an additional major in Sociology would be allocated 0.5 FTE to each major, and would be allocated 1.0FTE in L&S because both majors are in L&S.
- A Nursing major with a major in Spanish would be allocated 0.5FTE in Nursing and 0.5FTE in L&S.
- A PhD student in Cellular and Molecular Biology would be assigned to CALS, L&S or MED based on the home of the major professor.

Academic Group-Major/Certificate FTE (MAG-C)

This enrollment metric would be similar to MAG except that the calculation would also take into account a student's enrollment in a certificate program. Like majors, certificates are academic plans and are assigned to a school/college (and department). Certificate policy indicates certificates are secondary to majors. As for MAG, a student's 1.0 FTE enrollment could be allocated to the on the basis of an FTE split by major and certificate enrollment. Imagine a simple allocation method in which the 1.00 FTE is divided by the number of majors plus certificates. For example, for a student with two majors and one certificate, each would be counted as 0.33 FTE. In this illustration each major and certificate is given the same weight but a different weighting scheme could be devised.

- Enrollment in a certificate depends on a student taking an action to declare that certificate, and the certificate program staff also must notify the Office of the Registrar. There is inconsistency in practice across campus on recording enrollment in a certificate. Consequently, enrollment counts in certificate programs may be an underestimate of the number of students who consider themselves active in a certificate.

- Certificates are linked to the level of the student (undergraduate certificates are only for undergraduates) but they are not linked to the degree or major of the student. For example, Engineering undergraduates can do a Certificate in Math.
- Like majors, some certificates require an application and have requirements for admission beyond admission to the university; some have minimal requirements for admission.
- Credits for a major are 30 or more; certificates are usually 12-18 credits.
- Undergraduates can be enrolled in a certificate and no major, or a major and no certificate. (They still all have a degree and a Primary Academic Group.)
- A Political Science major who is also enrolled in the Certificate in Business would have 0.5 FTE allocated to L&S and 0.5 FTE allocated to the School of Business.
- A Bachelor of Social Work major with a Certificate in Gender and Women's Studies would be allocated 0.5 FTE for each and would be assigned 1.0FTE in L&S because both the major and certificate are in L&S.

Appendix 6: Potential Metrics for Unit of Instruction

Credits Follow Department (CFD)

In this method, course credits are attributed to an academic unit based on that unit's "ownership" of a curricular subject. For example the Department of Botany (A4813) is the "owner" of the Subject of Botany (208). Under this approach, the student credit hours in all Botany courses "belong" to A4813, without regard to who is teaching the Botany course sections. In the case of cross-listed courses, the credits of students who registered for the course under the Botany listing belong to A4813, while the credits of students who registered for the course under one of the cross-listed subjects belong to the other departments.

Credits Follow Instructor (CFI)

Under the Credits Follow the Instructor (CFI) method, student credit hours are attributed to the academic unit that pays the salary of the instructor of record. Details of the algorithm used for CFI are provided at the end of the appendix.

How these metrics stack up against some of the features of a good metric:

- CFI is more relevant for budget considerations and for moving money around.
- Both metrics are based on data sets that are developed for and driven by other uses (primarily communicating to students about the schedule of classes.)
- Data are stored in ISIS; doesn't depend on shadow-systems.
- CFD and CFI both depend on departments/instructional units following standards for use of credits in the schedule of classes.
- CFI depends on accurate documentation of instructor-of-record by instructional units.
- Disincentive for "gaming" with CFI comes from requirement to pay instructor; may incentivize use of lower paid instructional staff.
- The curriculum has governance and process controls that have to be met and also reduce "gaming".
- CFI supports the value of cross-unit exchange of instructional support.
- CFD and CFI are both conceptually simple to explain; CFI has a complicated underlying algorithm.

The A,B,Cs of Credits Follow the Instructor (CFI)

This is an overview of the components of the Credits Follow the Instructor (CFI for short) data system, an important tool for instructional analytics at UW-Madison coordinated by Academic Planning and Institutional Research. In CFI, key academic output metrics such as number of credits and courses are tied to a funding academic unit. CFI can be used to produce analytics such as credits and sections per instructor and department. These metrics can be used to inform funding decisions, budget adjustments or to assess instructional productivity. Credits Follow the Instructor is a complicated data system with several components, explained in the following sections.

A. Identify Courses and Section Instructors

CFI includes all courses taught in either the Fall or Spring semester of a given year if at least one student is enrolled on the 10th day of class (the official census date). The named instructor(s) of each course section are identified from the official listing of courses maintained by the Registrar based on information provided by departmental curricular representatives when the schedule of classes is prepared.

B. Identify Instructor Instructional Appointments

The October (for fall courses) and March (for spring courses) payrolls are used to identify the departments that are paying the instructor of each course section. CFI identifies all departments that are paying course instructors with instructional funds (program 2) because this is where instructional activity is expected. Credits do not “follow” instructors to departments that are paying instructors to perform other functions such as research, public service, or administration.

C. Convert Course Credits to Section Credits

Normally, course credits are only attributed to the graded (primary) course section. In a course with multiple sections (i.e. lecture and discussion and/or lab), the total course credits need to be divided among sections so that the credits can “follow” the instructor of each section. The total instructional time in each section (in minutes) and a weighting factor (used for all course sections) for the type of section (a lecture carries more weight than a discussion) both combine to determine how the credits are divided. The example below uses Chemistry 103 as an example. Chemistry 103 has three 50 minute lectures (150 minutes), two 50 minute discussions (100 minutes), and one 180 minute lab per week.

Chemistry 103 Course Sections				
	Lecture	Disc	Lab	Total
A. Starting Credits	4	0	0	4
B. Class Minutes	150	100	180	430

C. Section Weighting	1.00	0.67	0.40	
D. B x C	150	67	72	289
E. Ending Credits (D/D Total x A Total)	2.076	0.927	0.997	4.000

In this example, 2.076 credits per student enrolled would “follow” the lecture instructor, 0.927 credits per student enrolled would follow the laboratory instructor, and 0.997 credits per enrolled student would follow the discussion instructor.

D. Identify Instructional Department Homes

Instructional departments are the homes to tenure-track faculty or the curricular home of a curricular subject listing. Credits can only “follow” instructors to instructional departments.

E. Allocate Section Credits to Instructional Departments

Once all the semester courses and sections, instructors and instructional appointments, and instructional departments have been identified and the course credits have been converted to section credits, these variables are used to allocate credits to departments based on the funding of the section instructor.

Because of the complexity of departmental appointments and funding, CFI has “rules” that determine how credits are allocated. The ultimate goal is to identify which department keeps the “following” credits. When multiple options exist then these rules help determine the most likely department funding the instructor. Following are the most common examples of credit allocation rules.

If the section instructor has an instructional appointment and is paid by...

Then the section credits “follow” to...

1. One and only one instructional department

That instructional department

2. Multiple instructional departments AND one of them is the departmental home of the course

The instructional department that is the departmental home of the course

3. Multiple instructional departments AND more than one of them is the departmental home of the course (a cross-listed course)

Each instructional department home, prorated by the FTE of the instructor’s appointments in those departments

4. Multiple instructional departments AND none of them is the departmental home of the course	Each instructional department, prorated by the FTE of the instructor's appointments in those departments
5. One instructional department that is not the departmental home of the course	The instructional department paying the instructor
6. Multiple instructional departments and none is the departmental home of the course	The instructional departments paying the instructor, prorated by the FTE of the instructor's appointments

If an instructor lacks an instructional appointment in an instructional department then the instructor's credits stay with the departmental home of the course. If the course is listed under multiple curricular subjects, the course department homes share the credits in equal shares. When sections have multiple instructors, the section credits are divided evenly between them and then allocated using the methodology above.

Although CFI is primarily used to allocate section credits to instructors and their instructional department funding, CFI can also be used to allocate section counts. To allocate sections to instructors and instructional departments we divide sections into parts (if necessary) based on the proportion of total course credits "following" the instructor to instructional departments. For example, if two professors co-teach a course and 60% of the credits "follow" one instructor and 40% of the credits "follow" the other, then one instructor would get credit for .6 sections and the other instructor would get credit for .4 sections.

For questions about CFI or curricular analytics, contact:
Academic Planning and Institutional Research, Clare Huhn, clhuhn@wisc.edu

CFI EXAMPLES

Section instructor paid appointment status	The credits are assigned :	Example	Share
1. ONE instructional paid appointment in ONE instructional unit	..to the one instructional unit that pays the instructor	Faculty member with a sole paid appointment in Philosophy, paid on instructional funds. All credits taught go to Philosophy	76%
2. MULTIPLE instructional paid appointments in MULTIPLE instructional units AND ONE of the units owns the course offering	.. to the one instructional unit that owns the course.	Faculty member has paid appointments in both in Philosophy and Math. Teaches a Math course. All credit goes to Math.	3%
3. MULTIPLE paid instructional appointments in MULTIPLE instructional units AND MORE THAN ONE of the paying units has ownership of the course (cross-listed)	..shared between the units that pay and have ownership of the course based on FTE split of the instructor	Faculty member has paid appointments 50% in both in Philosophy and Math. Teaches a Math/Philosophy cross-listed course. 50% of credits go to Math; 50% to Philosophy. Instructor has 101-2 appointments in Philosophy (25%), Math (40%), French and Italian (35%). Teaches a Math/Philosophy cross-listed course. 62% of credits go to Math; 38% to Philosophy.	11%
4. MULTIPLE paid instructional appointments in MULTIPLE instructional units AND NONE of the paying units has ownership of the course	.. shared among the units that pay the instructor, pro-rated on the FTE split	Instructor has paid appointments in Philosophy (25%), Math (40%), French and Italian (35%). Teaches a History of Science course that is not cross-listed. 40% of credits go to Math; 25% to Philosophy, 35% go to F&I	<1%

5. ONE or MORE paid instructional appointments but NONE in a teaching (credit-generating) department	... goes back to the unit that owns the course	Instructor holds Lecturer appointment, paid appointment in Business Student Services (non-instructional) teaches General Accounting Credits go to Accounting.	2%
6. Instructor has no paid instructional appointment, not paid in an instructional unit	... goes back to the unit the owns the course	Instructor has an appointment as a researcher (non-instructional) in Waisman Center (not an instructional unit), teaches a Psychology course. Credits go to Psychology Dept.	7%

Instructional unit – Unit with tenured faculty (an academic department) and/or is a course Subject owner.

Instructional paid appointment – an appointment is eligible for credits to follow if the instructor is paid on activity/program 2 on the October or March payroll and is in an instructional unit.

Appendix 7: Budget Model Development Committee
Subcommittee for Crediting Collaborative Grants
August 28, 2014

Indirect cost return and collaborative grants

As described in the appended document, the subcommittee was charged to assess whether current methods for attributing indirect cost generation on collaborative grants promote a fair and efficient distribution of overhead dollars to schools and colleges. The primary goals are to foster excellence and encourage collaboration in research. We focused our discussion on projects that cross lines among schools and colleges.

To estimate the prevalence of projects that cross school/college lines, we compared the administrative home of projects with the primary PI's appointment home. Thirteen percent of all FY13 projects, and 16% of indirect expenditures, have primary PIs with a school/college appointment home that is different from the project home. About 80% of projects in the Graduate School have PIs whose affiliation is outside of the school. Among the other schools/colleges, the proportion of projects with PIs outside of the unit ranges from about 6 to nearly 11%. Based on expenditures, 84% of indirect dollars generated on projects in the Graduate School have a PI outside of the school/college, compared to about 2 to 13% for other schools and colleges.

We also compared net differences in the indirect dollars generated based on locus of expenditures (the current method) vs. indirect dollars based on PI tenure home (or job department, if non-tenure track). Some schools/colleges showed little net difference, indicating that the number of projects run through other schools/college was similar to the number of projects run through the unit by PIs with homes outside the unit. By contrast, some schools/colleges had a higher net attribution based on tenure/job home than based on expenditures. In the most extreme examples, a quarter to a third of projects of a school or college's PIs are run through schools or colleges other than the PI's home.

Goals for crediting and distributing indirect dollars.

In addressing our charge to assess methods for attributing indirect cost generation on collaborative grants, we considered how overhead dollars are used in centers, schools and colleges, and the desired outcomes for crediting and distributing indirect dollars to units. We agreed that indirect dollars should:

- a) *promote excellence in research and efforts to obtain extramural funding;*
- b) *foster collaboration;*
- c) *help to cover administrative costs incurred in units for pre-award and post-award support;*
- d) *contribute to the costs of faculty start-up and retention expenses;*
- e) *contribute to the costs of infrastructure and facilities that user fees and other direct costs do not cover, including contributing to equipment replacement and other investments;*

- f) *support cost-sharing for matching funds;*
- g) *provide flexible/discretionary money to schools/colleges/centers to address the higher needs of the unit, those that affect many individuals and programs.*

In short, a method that fairly credits indirect cost generation should foster return of dollars to address the indirect costs of research incurred in all of the participating units. Among the above goals, we considered that (a), (c), and (f) are largely occurring as intended. Current methods are largely seen as supporting collaboration (b), but could have a negative impact if a school/college discourages faculty from working through centers because it cannot afford to lose indirect costs. Likewise, goals (d), (e), and (g) may or may not be achieved by current methods, depending on whether indirect dollars flow back to all cost centers, which depends on how projects are set up and on post-allocation sharing of indirect dollars.

The subcommittee also considered what features are desirable in a method for crediting (and distributing) indirect dollars. We determined that an effective method should

- h) *be understandable, transparent, and predictable; and*
- i) *favor consistent approaches within a center over ad hoc agreements.*

The current method of distributing indirect dollars based on the locus of expenditures makes it easy to track the source of indirect dollars. However, other than a few centers, many *ad hoc* arrangements are in place. In general, handling of collaborative grants in centers was not viewed as systematic.

We noted that the new budget model will guide distribution of funds from the campus to schools and colleges, but will not dictate how funds are distributed within schools and colleges, which is the responsibility of the appropriate Dean. Even so, it would be a plus if the algorithm used to credit indirect cost generation would

- j) *be useful to schools and colleges in guiding the distribution funds to their component departments and centers.*

As with (h), goal (j) is achieved because it is easy to track where indirect dollars are generated.

Subcommittee endorsement of committee decisions on indirect cost allocation

Indirect cost dollars flow to schools and colleges through two paths. First, the annual Capital Exercise (Fund 150), which amounted to \$29.6M in FY 2013-14, has been based on a formula that accounts for both total research expenditures and indirect costs generated during the prior three-year period. Second, a portion of the Fund 101 budgets provided to schools and colleges is derived from indirect costs; currently, the amount of funds flowing through this path is approximately equal in magnitude to

the Capital Exercise. The allocation of these funds is historically based, but related to past Capital Exercise allocations.

The Budget Model Development Committee has proposed a revision of the formula used for the Capital Exercise as a primary research activity metric. Specifically, equal portions of the Capital Exercise funds will be distributed to schools and colleges based on total research expenditures and on indirect costs generated. Expenditures and indirect costs for the prior two years will be considered, weighting the most recent year at twice the value of the year before. This change to the Capital Exercise formula has several advantages as a research metric. It provides a greater incentive to seek extramural funding from agencies that provide indirect costs than the current model. By using total research expenditures to allocate half of the funds, the model also recognizes that important scholarly activity on campus may be largely supported by extramural sources that provide limited or no indirect costs. Using the prior two years of data allows for some smoothing of the inevitable fluctuations in extramural funding while maintaining an emphasis on recent activity. The adoption of the Shared Financial System several years ago insures that the attribution of both direct and indirect expenditures to schools and colleges is straightforward. This fact is not well understood by the faculty and some effort at education on this point by campus leaders would be worthwhile.

This subcommittee endorses the research activity metric proposed for allocation of Capital Exercise funds to schools and colleges. Further, we encourage the Budget Model Development Committee to use the same metric for allocation of indirect cost-derived Fund 101 dollars to schools and colleges. Our rationale for this suggestion is that the goals of the two funding sources are the same. As discussed above, both funding sources are intended to foster research excellence and support research infrastructure.

Impact of indirect dollar attribution on collaborative research

Our charge is to evaluate whether current or proposed allocation models encourage collaboration in research across school and college lines by properly attributing credit for such research activities. We identified two broad cases for consideration. First, the “simple” case, includes grants with two or more Principal Investigators (PIs), or a PI and co-Investigators, who reside in different schools or colleges. In this case, it is straightforward to insure that both research expenditures and indirect costs are credited to the appropriate schools or colleges. For example, consider a multiple-PI grant involving Prof. X from college A and Prof. Y from school B. At the time of the award, fund accounts are established that allow both college A and school B to charge expenditures. Expenditures in Prof. X’s laboratory are allocated to college A and those for Prof. Y are allocated to school B. The change in the accounting system made a decade ago insures that indirect costs are appropriately attributed at the time of expenditure in each school/college. Thus, college A gets appropriate credit for expenditures and indirect costs related to the activity of Prof. X and school B gets the credit for Prof. Y’s activity. We concluded that the existing mechanism insures that proposed research activity metric will encourage, and not inhibit, collaborative research across school and college lines when investigators are drawn from multiple schools or colleges, and they set up separate accounts.

The second, and more complex case, involves the research centers on campus. The more than 200 centers currently registered in the Provost's office are highly diverse in reporting and operating structure, number and affiliation of members, and level of extramural research support. However, most share the common goal of establishing communities of scholars that transcend traditional disciplinary boundaries. The impact of the centers on our research activity is substantial. During the most recent complete year, \$160M in awards were made to 14 of the larger centers on campus. By design, many centers include faculty from multiple schools and colleges, support research activity by faculty who have laboratories in space controlled by the center as well as faculty who reside in school/college space, and are the locus of award for at least some of the extramural research support of center members.

Given the diversity of centers, it is not surprising that there is great variation in how indirect cost return is shared between a center's home school or college and outside schools or colleges that contribute faculty activity to the center. We interviewed several directors of large centers to ascertain how research activity within the centers is credited to the participating schools or colleges for purposes of indirect cost return. In some cases, these decisions are made on an *ad hoc* basis, by grant or by investigator, while in others, clear policies are in place that insure that participating schools and colleges share in the indirect cost return. Two examples of the latter follow.

The Wisconsin Energy Institute (WEI) was created in 2006, is administered by the College of Engineering, and supports 30 faculty members from 4 schools or colleges. The WEI has established the following policy for distribution of indirect cost return for large (greater than \$1M annual direct costs), multi-investigator grants. The administrative college receives 10%, the WEI 30%, the PIs receive 10% (based on expenditures), and their home school or college 10%. The remaining 40% is allocated as "Large Grant Discretionary" and is used to support infrastructure needs related to the grant.

The Waisman Center, founded in 1973, is located within the Office of the Vice Chancellor for Research and Graduate Education and includes resident PIs (*i.e.*, those who have lab space with the Waisman Center) from five schools or colleges, as well as non-resident affiliates from three additional schools or colleges, totaling approximately 50 PIs. Members who reside in center space are expected to submit and administer their extramural grants through the center. Faculty salaries associated with these grants are routed through their home school or college, providing direct credit for that expenditure and associated indirect costs. Members who do not reside in center space have access to core facilities but are not allowed to submit grants through the Waisman Center, unless a request is made by the Dean or Department Chair.

Both of these centers are successful and each has established rules regarding which grants may be submitted through the center and insures that a portion of the indirect cost return benefits the home school or college of the participating faculty. There are other models for achieving the same ends of transparency and consistency within a particular center. However, it is clear that some centers do not have an equally transparent process.

Conclusion and recommendations

We endorse the revised method proposed by the Budget Model Development Committee for the allocation of Capital Exercise funds to schools and colleges. We further recommend that the same method be used as the primary research metric for allocation of indirect cost-derived, Fund 101 dollars.

We believe that having policies in place to insure that the home schools or colleges of center faculty receive appropriate credit for research activity within centers is critical for fostering multi-disciplinary research across school and college lines. The use of the proposed research metric in the campus budget model will increase the importance of this issue. A path forward is suggested by the UW guidelines for centers, which states that each proposal for a new center must answer the question “What process will be used to assign or share credit for extramural funding between the center and the Primary Investigator’s department?”. The guidelines also state that the deans should provide periodically a report to the provost on center activities. Thus, we recommend that the deans report to the provost, for each center in their school or college, the process for sharing credit across school and college lines as well as the rules within the center for determining which grants may be submitted through the center. That information should be reviewed by the campus leadership to insure that appropriate policies are in place. This one-time reporting requirement would be followed up by including information on policies for sharing credit in the 5-year reports to the Provost that are required in the Center Guidelines (https://apir.wisc.edu/uapc/CenterGuidelines_2011_Final.pdf). It would also be desirable for the UW guidelines for centers to provide examples of appropriate mechanisms to insure sharing of credit across schools and colleges.

Budget Model Development Committee
Subcommittee for Crediting Collaborative Grants
Charge Document
June 25, 2014

In March 2014, the Chancellor established a Budget Model Development Committee and charged it with the task of proposing a new budget model for UW-Madison. In the course of this work, a question surfaced regarding the distribution of indirect dollars to research units. Currently, the monies are attributed to the division/department in which the direct expenses and associated overhead charges are incurred in the general ledger accounting system. A question was raised about whether some of these dollars could be attributed in some other manner to facilitate a more efficient and equitable sharing of overhead distribution between units for principal investigators who manage grants that cross divisional lines; ultimately, one that encourages more collaboration in research.

After discussion with the deans and the University Committee, it was agreed the question was worth pursuing even though not directly on point for the Budget Model Development Committee. Thus, a subcommittee will be formed and charged as follows:

- analyze and determine whether current overhead attribution methodologies result in material inequities in overhead distribution to schools/colleges.
- if warranted, based on the results of the above, develop and recommend alternative methodologies, algorithms or other options that would facilitate more equitable attribution, or greater flexibility, for overhead attribution between schools/colleges.
- analyze and determine whether current functionality in existing enterprise information technology systems (general ledger, grants) supports recommended alternatives.
- if current data systems functionality does not support recommended alternatives, provide options for development of new functionality within existing enterprise systems or development of processes and/or data repositories that would support recommended alternatives on an enterprise level.

This subcommittee is advisory to the Budget Model Development Committee. The timeline established in the March 2014 charge document will be maintained. The recommendations of the subcommittee will be given consideration if completed in time for the Budget Development Committee to meet its deadline. The timeline for the work under the committee's charge will not be extended to accommodate this work of the subcommittee.

The subcommittee will be chaired by Dean Kate VandenBosch and Professor Norman Drinkwater.

Team members include Professor Michael Collins, Professor Michael Corradini, Dean Julie Underwood, and Associate Deans Steve Ackerman, Petra Schroeder and Eric Wilcots. The work of the subcommittee will be supported by Tim Norris, Alice Gustafson, Kim Moreland and other subject matter experts as needed.

Appendix 8: White paper presented by the Budget Model Review Committee

To view the Budget Model Review Committee White Paper, please visit:

www.vc.wisc.edu/budgetmodel.htm