Incentive-based Budget Model Subcommittee Report
Preface

To fully understand this report, you are encouraged to learn more about IBB by reviewing all of the informational and educational materials on the IBB website.

We are committed to meeting with anyone, anytime, anywhere to discuss IBB. If you would like to schedule a meeting, please contact Alberto Citarella, University Budget Director.

The following report is one of eight separate reports that will be used to develop a comprehensive Incentive-based Budget Model for the University of Vermont. Each of the eight subcommittees was asked to address a particular component of the overall IBB budget model.

The proposed algorithms contained within the reports are not intended to be a perfect accounting of revenue generation and resource usage across the University. They do, however, provide a solid foundation upon which the initial IBB model will be based, and they support the project’s Guiding Principles and the University’s Academic Excellence Goals.

Each report has only been vetted by the subcommittee that wrote it. It is possible that the proposed algorithms presented by the eight IBB subcommittees may, at times, contradict each other.

The IBB Steering Committee will use these reports as the basis for its further discussions and final recommendation on an integrated IBB budget model. It is possible that the Steering Committee may need to adjust the proposed algorithms to create a coherent, comprehensive and workable budget model.

It is strongly recommended that you read all eight subcommittee reports; they are all interrelated. If, after reading a report, you have feedback to share, please complete the survey that accompanies the report.

January 29, 2014
Interdisciplinary Scholarship and Teaching Subcommittee Report to the IBB Steering Committee
January 24, 2014

I. **Charge:** By January 24, 2014, submit for the IBB Steering Committee’s consideration a report that identifies the potential impact of an IBB budget model on interdisciplinary scholarship and teaching, as well as suggestions for how a new budget model might foster interdisciplinarity. The report should include: a) Identification and definition of the different types of interdisciplinary scholarly and teaching activity on campus; b) Identification of the different types of interdisciplinary organizational units on campus, including research centers; c) a determination of which of these activities/organizational units have budget model implications; d) identification of those implications; e) suggestions related to the design of the budget model that will foster interdisciplinarity; and f) identification of metrics that will allow for the measurement of interdisciplinary activity on campus.

II. **Members of the Committee:** William Mierse (Chair, Art and Art History), David Barrington (Plant Biology), Christopher Berger (Molecular Physiology and Biophysics), Rosemary Dale (Nursing), Maggie Eppstein (Computer Science), Stephanie Kaza (Rubenstein School), Tammy Kolbe (Leadership and Developmental Sciences), Charlotte Mehrten (Geology), Wolfgang Mieder (German and Russian), David Novak (Business Administration), Julie Roberts (Romance Languages and Linguistics).

III. **Statement:** It needs to be stated at the outset that interdisciplinary programs are an essential feature of the health and well-being of all the units at UVM. The world’s most pressing problems cross disciplinary boundaries; this is where some of the most exciting and important research opportunities lie. Interdisciplinary programs draw on the many talents of faculty across colleges and departments, permitting a small research university to compete with much larger institutions in attracting and retaining talented faculty and graduate students. It is these talented faculty and graduate students in interdisciplinary programs that have, over the years, enabled UVM to compete for research dollars and acquire several large research grants. Likewise, some of our interdisciplinary graduate and undergraduate programs are among the most well subscribed, drawing students to our campus for these strengths in cross-cutting areas.

IV. **Methodology:** The Committee met five times to discuss issues relevant to the topic. The Committee created a faculty survey which was distributed across the campus to help ferret out all possible forms of interdisciplinary work occurring at UVM. Results indicate that 120 faculty completed the survey. Based on survey information and knowledge of committee members, we have compiled this report to assist the Steering Committee in formulating policy.

V. **Executive summary:** The Committee’s main concern is with the potential for IBB to reinforce and create silos by establishing competition for student credit hours (SCH). This must be prevented if interdisciplinary activities are to remain healthy and increase at UVM. The Committee has concluded that in order to encourage interdisciplinary undergraduate and graduate education it is essential that SCH generally follow the unit of the instructor (or instructors) of courses so that academic units have the funds necessary to maintain quality faculty to deliver the instruction and are incentivized to continue to offer courses to students in interdisciplinary programs. To encourage academic units to invest in interdisciplinary undergraduate and graduate teaching, the Committee urges that a fair method of accounting be established that will set aside: a) a portion of tuition dollars to cover administrative costs and college level advising, b) a portion to be provided to academic units that provide faculty advisors for students independent of what units actually provide the courses for the students, with c) the
majority of SCH funds allocated to the unit in which the instructor is based. To prevent redundancy of courses across or within different colleges or schools ("course creep") the Committee proposes that the Senate Curricular Affairs Committee take a more active role in the oversight of new course creation and curricular changes.

VI. Types of interdisciplinary activities at UVM

A. Teaching

1. Interdisciplinary undergraduate teaching
   - Team taught courses
     - With faculty within a single college or school
     - With faculty from two or more colleges or schools
   - Independent full program units (e.g. Holocaust Studies)
   - Interdisciplinary majors (e.g. ENVS, Biochemistry)
   - Interdisciplinary Minors (e.g. Food Systems, Green Building and Design)
   - Cross-college minors
   - Continuing Education courses offered through departments
   - Honors College
   - Sustainability oriented courses

2. Interdisciplinary graduate teaching
   - Interdisciplinary graduate programs (e.g. Natural Resources, Food Systems, Ecological Economics, IGERT in Smart Grid technology)
   - Faculty members providing courses needed by graduate students in another unit (e.g. CMB).
   - Faculty members who serve as primary or secondary MA, MS and PhD dissertation advisors for students in other colleges.
   - Interdisciplinary graduate programs that provide TA support for discipline-based graduate programs (e.g. CMB and Neuroscience).

B. Research

- Collaboration on interdisciplinary grants: Research grants with single or multiple PIs or coPIs; Research infrastructure grants (e.g. EPSCOR); Center grants (e.g. Transportation Research Center and VCC).
- Collaboration on peer reviewed publications
- Participation in interdisciplinary seminars and reading groups (e.g. Complex Systems, Neuroscience).
- Interdisciplinary Centers collaborating with State agencies (e.g. Lake Champlain research).

VII. Types of interdisciplinary organizational units at UVM

A. Research only units

- Autonomous research support units that have no attached faculty (e.g. VACC, Geospatial mapping)
- Autonomous research units with affiliated faculty, most of whose primary appointments are in another unit but that are responsible for some portion of some faculty appointments (e.g. GUND Institute, Transportation Research Center)
Interdisciplinary Scholarship and Teaching Subcommittee Report to the IBB Steering Committee
January 24, 2014

• Autonomous research units with affiliated faculty all of whose primary appointments are in other units (e.g. Complex Systems)

B. Predominately teaching units
• Autonomous teaching units with cross-disciplinary faculty (e.g. BCOR program)
• Teaching units located within a college or school but using cross-disciplinary faculty from multiple colleges or schools (e.g. Global and Regional Studies, CAS).
• Teaching units serving students in multiple colleges or schools with faculty appointed in multiple colleges and schools (e.g. Environmental Studies Program)

C. Combination research and teaching units
• Autonomous research and teaching units with service connections to the State of Vermont (e.g. Center for Research on Vermont)
• Research and teaching units located within a specific college/school with cross-disciplinary faculty from multiple colleges/schools (e.g. CMB, Cellular and Molecular Biology Graduate Program)
• Research and teaching entities located in a college/school and using cross-disciplinary faculty from within that same college or school (Holocaust Studies in CAS).

VIII. IBB implications for undergraduate interdisciplinary teaching activities
(Algorithms)
1. Standardize apportioning SCH for team taught courses: There is no clear standard for SCH apportioning among departments providing instructors for team taught interdisciplinary courses. These courses are important because they service interdisciplinary programs, attract and help retain good students, and attract and retain good faculty. Under IBB, deans may be disinclined to support these courses, especially when enrollments are low. Department chairs may be less willing to allow faculty to teach such courses since they may not service the department’s majors. A fair, equitable, standardized, and transparent solution must be created and applied so that SCHs are appropriately apportioned.

2. Recognize and protect interdisciplinary workload assignments: Interdisciplinary majors often depend on faculty from multiple departments (e.g. Global and Regional Studies, Holocaust Studies). In many cases the courses created for the major can service only the interdisciplinary major, not the majors in the unit that houses the faculty member. In some cases, to teach these courses may require that the faculty member be relieved of teaching responsibilities within the home department. The IBB model could well work against these interdisciplinary majors. The cost of providing lecturer coverage for courses normally taught by the interdisciplinary instructor may drain funds from the unit that may not be compensated if student enrollments in interdisciplinary courses do not provide adequate SCH for the instructor of record; however, these workload assignments need to be recognized as important and funding provided to help departments to cope.

3. Incentivize units providing majors for another college: Some undergraduate programs offered by a department receive their entire base budget funding from a single college but offer majors through another college (e.g. Computer Science, housed in CEMS but also offers a BA through CAS). The IBB structure could be a disincentive for this arrangement depending on who benefits from the SCH. The Committee feels that the bulk of funds should flow to the
colleges/schools housing the department that provides the teaching and advising for the major with only a small portion for the college in which the student is matriculated.

4. **Recognize the importance of cross-college minors:** The cross-college minor allows for students from one college to take courses and make use of faculty in another college in pursuit of the minor with no financial return to the college providing the minor. Minors are not tracked in the same way as majors, so no credit is earned by departments serving minors from other colleges. IBB could work as a disincentive for promoting cross-college minors, something that is known to attract and retain students at UVM. **The Committee suggests that cross-college minors be tracked to study whether steps need to be taken to address this.**

5. **Watch for redundant courses:** Since IBB will incentivize colleges to retain students and the SCH generated by students, colleges may be tempted to create redundant courses within the college rather than allow students to fulfill requirements with courses from outside the college (e.g., students in RSENRE are required to take courses in Biology and English in CAS). This could cause “course-creep” and could result in an inefficient system with potentially inferior educational outcomes. **To prevent this, the Committee urges the Faculty Senate’s Curriculum Advisory Committee to serve as watchdog, empowered to block redundant course development unless adequate justification can be provided.**

6. **Maintain and incentivize the development of undergraduate interdisciplinary centers:** Some interdisciplinary centers have undergraduate teaching as part of their mission (e.g., Center for Holocaust Studies, Center for Research on Vermont). These centers need to be sustained and new such centers encouraged. They offer undergraduate courses by using faculty from different departments but have no means of generating revenue, yet they require a director and administrative staff. Their continued existence depends on the good will of the deans of the colleges in which they are housed. **The Committee suggests that the deans of colleges in which such centers exist (or in which they might develop) create appropriate protocols for the creation and financial maintenance of such centers. These should be developed in consultation with the development individual responsible for raising outside funds to ensure the long-term health and vitality of future interdisciplinary teaching centers.**

**IX. IBB implications for graduate teaching and research activities (Algorithms)**

1. **Define a transparent and equitable way of assigning graduate coursework and research SCH:** Interdisciplinary graduate students are often admitted to one program but take courses or become part of a research program in another college or are advised by faculty in a college other than the admitting college. There is no standard formula for apportioning the SCH in such interdisciplinary programs, and one needs to be created that is equitable, fair, and transparent for all parties involved. **The Committee suggests that bulk of the graduate coursework SCH should go the unit of the course instructor, following the same model established for undergraduate SCH. Research SCH should go to the research program or to the unit in which the primary advisor is housed. Administrative costs associated with graduate students should be covered by a small portion of the tuition dollars going to the Graduate College.**

2. **Recognize and protect the variety of GTA’s in interdisciplinary programs:** Graduate TAs in interdisciplinary programs often teach in programs other than the one into which they have been admitted. Different graduate programs pay TAs at different rates. This difference
Interdisciplinary Scholarship and Teaching Subcommittee Report to the IBB Steering Committee

January 24, 2014

reflects the competitive nature of certain fields of study and the need to attract and retain the best graduate students. In an IBB setting it is possible that different colleges might restrict cross college GTA-ships as a means of holding on to GTA-ships within the college or because of a difference in GTA salary structures. The Committee strongly advises that the differences be allowed to continue so that programs can compete for the best students, but it also recognizes the problem. One solution might be separating GTA pay from research support, requiring all graduate students to teach. GTA pay could then be standardized, and funding support would be adjusted in the non-teaching portion of the funding package offered to prospective graduate students.

3. Recognize and protect the variation use for attracting and retaining graduate students: Several models are used by interdisciplinary graduate programs to attract and retain talented students. One model (e.g. CMB and Neuroscience) recruits students by offering a two-year stipend with a third year funded through research grant funds. Another model (e.g. BioEngineering, Material Sciences, Clinical & Translational Science, and the Transportation Research Center) uses graduate research fellowships specific to the unit. The variation in models reflects the different needs of the programs, and we do not support efforts to standardize the structure which could result in a loss of competitive edge. To avoid possible parochialism from IBB, the Committee proposes creating a centralized body, under the purview of the provost, to maintain and regulate the various funding models being used to attract and retain graduate students.

X. IBB implications for academic research activities (Algorithms)

1. Manage the proliferation of interdisciplinary research units: As can be seen from the list above (section VII) there has been a proliferation of research units across campus over the last few decades. These go by different names, have different functions, may or may not be engaged with teaching, may or may not be funded internally, may or may not have external funding, and use a variety of different reporting models. The Committee suggests that the Provost’s office identify these units and gather information on affiliations, governance models, nature of the interdisciplinary research, type of funding structure, and level of engagement with teaching. We recommend developing a typology of unit types to guide the formation of any new interdisciplinary units. This needs to be done before considering whether some units might be dismantled if no longer operating according to their founding documents.

2. Establish guidelines for Interdisciplinary research units: There are no guidelines for establishing interdisciplinary research units. Over the years some have been established through top-down mandates others through collaboration of faculty from several colleges. What has emerged is an ad hoc system. The Committee urges that a new committee, representing the research aspects of the colleges, schools, and units along with representation from the Faculty Senate and the Provost’s office, be established to create guidelines for developing new interdisciplinary research units and to vet all new proposals. The committee would be charged with the responsibility for monitoring: a) the budgetary and financial structures for the unit, b) the governance structure, and c) the unit design in relation to the established typology.

3. Define a system for apportioning F & A: The apportioning of F and A can become a problem for budget allocation and credit for faculty evaluations for interdisciplinary grants with PI’s and co-PI’s from different colleges or school. The Committee suggests the arrangements
regarding F & A apportionment be determined up front for each grant based on the efforts of the faculty involved. We recommend that SPA maintain statistics on who are equal PI’s and who are co-PI’s for proper tracking of interdisciplinary research funding and correct attribution of credit to the faculty involved.

XI. Metrics for monitoring health of interdisciplinary activities
1. Absolute and proportion of undergraduates with
   • A second major in another college or school
   • Major and minor in different colleges or schools
   • Majors in interdisciplinary programs that span academic units (e.g. ENVS)
   • Absolute and proportion of undergraduate SCH taken in academic units outside of the college or school of matriculation
2. Absolute and proportion of graduate students with
   • Advisors/co-advisors of record from different academic units
   • Enrollment in interdisciplinary graduate majors (e.g. Neuroscience, CMB, Materials Science)
   • Enrollment in interdisciplinary graduate certificates (e.g. Complex Systems, Transportation Center, Ecological Economics)
   • Absolute and proportion of graduate student SCH taken in academic units other than that of matriculation (for students that matriculate in only one unit)
3. Absolute dollars and proportion of extant external grant monies
   • With PI’s and co-PI’s from different academic units
   • Affiliated with interdisciplinary units
4. Number of team-taught courses with instructors from different academic units

XII. Conclusion: As a small research institution UVM can only compete with major institutions for the best undergraduate and graduate students and for the maximum research dollars by engaging the many talents of individual faculty. The most efficient means to reward these talents is to bring together faculty from many disciplines and encourage them to work together to create new modes of discourse in teaching and in research. UVM has been successful in doing this in the past, but it must continue to foster this type of collegial work in the future. The potential threat of “silo-ization” posed by the IBB budget model must be countered pro-actively and incentives put in place to foster the strong desire of UVM faculty to engage in different types of interdisciplinary teaching and research.