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A Note Concerning Interdisciplinary Sponsored Research and Assignment of Shared Credit

A 2004 report of The National Academies' Committee on Science, Engineering, and Public Policy defined interdisciplinary research as "a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or field of research practice." It is becoming increasingly clear that the insights and expertise of researchers from many disciplines will be required to design and execute the research needed to generate answers to the significant questions of the present decade – such as reversing global climate change, ending third-world hunger, or designing treatments for chronic diseases like cancer. Researchers in many disciplines at multiple institutions are collaborating to collect, organize, and provide access to research data and information critical for advancement of knowledge in their areas (e.g., biomedical informatics, sensor networks). Interdisciplinary and inter-institutional collaborations are rapidly becoming required components of the center-level grant applications submitted to federal agencies. (See, for example, the National Institutes of Health *Roadmap for Medical Research* and its focus on Clinical and Translational Science Awards).

The importance of interdisciplinary research for growing the research enterprise at UMass Boston has been explicated in the products of several recent strategic planning activities. The university's research vision statement endorsed by the Chancellor's Strategic Planning Task Force in February 2007 includes this key element: "The identification of research clusters and the investment of significant resources in research infrastructure will permit teams of faculty members and students to be engaged in world-class interdisciplinary, multi-departmental, and multi-institutional projects of national and international significance." The November 2007 Battelle report, *Research Reenvisioned for the 21st Century: Expanding the Reach of Scholarship at the University of Massachusetts Boston*, states: "In the future, having deep strengths in single disciplines will matter less than the ability to advance interdisciplinary fields that apply technology convergence to key research problems and applications development."

At UMass Boston we are strongly committed to new models that provide incentives to stimulate and eliminate barriers that obstruct interdisciplinary and cross-unit research collaborations. For example, with the assistance of the Battelle consultants, we have identified use-inspired interdisciplinary research clusters that integrate research pursuits, applied and basic, across multiple departments, centers, institutes, and colleges. Workgroups of faculty and staff members have recently proposed recommendations for focused strategic investment

of discretionary resources in these research clusters. Our Venture Development Center assists researchers and external partners in industry and other institutions to form creative alliances and establish interdisciplinary research centers to compete for major new funding.

Interdisciplinary collaborations provide exciting opportunities for researchers, but it must be attractive for them if they are to engage in it. For example, researchers from different departments are more likely to collaborate if credit for a sponsored program award accrues to the departments of all of the collaborators. Colleges will be more willing to contribute essential resources for a project if the recovered F&A costs of a sponsored program are returned to each college in proportion to the amount of its contributions. This note is written to clarify the UMass Boston procedure designed to stimulate interdisciplinary sponsored research through the assignment of shared credit and the return of recovered F&A costs of sponsored programs.

Prior to FY06, the annual report on research and sponsored programs was based only upon the way awards and project/grant accounts were set up in the university's enterprise resource planning (ERP) system (i.e., PeopleSoft). The ERP rules require that each award and account must be set up with a unique department ID¹. Consequently, the annual report did not accurately represent the contributions of multiple departments participating in interdisciplinary research. In FY06 a process was implemented to address concerns about shared credit on sponsored program awards involving researchers from multiple departments and units of the university.

The form *Memorandum of Understanding for Co-PIs* is provided by the Office of Research and Sponsored Programs (ORSP) to allow the PI of an interdisciplinary sponsored program to assign a percentage of credit to one or more co-principal investigators² (Co-PIs) based upon segmented intellectual or programmatic contributions, irrespective of where the award is managed according to the ERP system³. This information enables the vice provost for research to override the information on the ERP reports and distribute credit to the Co-PIs and their home departments and units (e.g., college, school, research institute) in proportion to the contribution percentages listed on the form. Departments and units can then use this information for a variety of purposes, such as deliberations on personnel issues (e.g., promotion, tenure, or merit salary raises) and for reporting to national accreditation bodies and professional organization surveys.

It is important to note that assignment of credit to one or more Co-PIs does not alter the PI's obligation to provide prudent and effective administrative and financial management of the sponsored program. The PI has the responsibility and authority to monitor the performance of

¹ The account can have multiple signatories, not all of who need to be in the same department. For example, the business manager in a college is typically a signatory in addition to the PI to assist with HR processes.

² See *A Note Concerning Principal and Co-principal Investigators* for detailed information on the definition and eligibility of sponsored program team members, and the roles, duties, and responsibilities of the multiple parties who may be involved in an interdisciplinary sponsored program.

³ For program projects, center grants, and similarly complex sponsored programs where the establishment of multiple project/grant IDs is mandatory (e.g., certain NIH awards with cores and individual pilots and projects), credit will accrue on a project/grant ID basis.

all components of the sponsored program in accordance with the terms and conditions of the award and consistent with all university policies, and with the highest ethical standards.

In addition, the form allows the PI to indicate how to distribute the recovered F&A costs of the sponsored program that are to be returned as research trust funds (RTF) to the PI, the department, and the unit. UMass Boston policy stipulates that 30% of the recovered F&A costs of a sponsored program are returned as follows: 5% to the PI, 15% to the department, and 10% to the unit in which the department is located. The proposed distribution of the funds returned to the PI and Co-PIs should be the same as the proposed assignment of credit, whereas the proposed distribution to the departments and units should be based on the utilization of resources and facilities during the research, such as administrative support (e.g., accounting, payroll, human resources), laboratory and office space, equipment, materials, and supplies.

The MOU's apportionment of the credit and the recovered F&A costs to be returned is based upon agreement among the researchers, the department chairpersons, and the unit heads (e.g., deans, institute directors) at the time that an interdisciplinary research proposal is being reviewed prior to transmission to the sponsor. If the parties are unable to come to an agreement, the issue will be mediated by the appropriate dean or director in the case where all parties are within the same unit or by the vice provost for research in the case where the parties are from different units. If the MOU is not provided at the time of submission due to extenuating circumstances (e.g., lack of agreement prior to the submission deadline), then an award will not be released by ORSP for account set up until the form is completed and endorsed by the parties. The MOU covers the entire period of multi-year sponsored program awards unless it is superseded by a revised MOU in cases where the scope of work changes significantly, the contribution of a party changes materially, or a new party is added to the project team.

Examples

1. Ms. Z is a full-time research associate in the Institute for Community Inclusion and the single PI on a one-year \$50,000 sponsored program award with \$32,468 of direct costs and \$17,532 of F&A costs. There are no other collaborators. The project activities are to be conducted in ICI space and project management is being handled by ICI. In this case, no apportionment of credit is required and the annual report of the university will list a \$50,000 award to ICI with Ms. Z's name. Of the F&A costs that are recovered, \$5,260 will be returned as follows: Ms. Z receives 5% or \$877 and ICI receives 25% or \$4,383 because it is both the department and the unit.
2. Dr. X in Chemistry will collaborate with Dr. Y in Biology on a one-year \$100,000 sponsored program award with \$64,935 of direct costs and \$35,065 of F&A costs. Dr. Y will serve as the PI and Dr. X will serve as the Co-PI. One project/grant account ID will be established and located in Biology on the ERP system. The project's financial activities will be managed by Biology and the majority of the research activities will take place in Dr. Y's lab in Biology. It is agreed by Drs. X and Y and the chairpersons of Chemistry and Biology that the apportionment of the credit for this interdisciplinary research should be 40% to Dr. X and Chemistry and 60% to Dr. Y and Biology. The same split will be applied to the recovered F&A costs to be returned to the PIs. Because the project management is being handled by Biology and most of the research activities

are taking place in Dr. Y's lab, the parties agree that 80% of the recovered F&A costs to be returned to the departments should be allocated to Biology and 20% to Chemistry. At the end of the fiscal year, the annual report of the university lists a \$60,000 award to Biology with Dr. Y's name and a \$40,000 award to Chemistry with Dr. X's name, both awards having the same title and project/ grant ID. Of the F&A costs that are recovered, \$10,520 is returned as follows: 10% or \$3,507 is returned to the unit, in this case all of it to the College of Science and Mathematics because both Dr. X and Dr. Y are faculty members in that unit; 15% or \$5,260 to the departments, in this case \$4,208 to Biology (80%) and \$1,052 to Chemistry (20%); and 5% or \$1,753 to the PIs, in this case \$1,052 to Dr. Y (60%) and \$701 to Dr. X (40%).

3. Dr. A in Psychology in the College of Liberal Arts, Dr. B in Nursing in the College of Nursing and Health Sciences, and Dr. C in Computer Science in the College of Science and Mathematics plan to submit a proposal to NSF for an interdisciplinary research project. The Year I award will be \$750,000 with \$487,013 of direct costs and \$262,987 of F&A costs. Dr. A will serve as the PI and Drs. B and C will serve as Co-PIs. The three researchers will use the resources of their respective departments to carry out their individual responsibilities, although Psychology resources (e.g., space, communications, supplies) will be used for collaboration activities. One project/ grant ID will be established and located in Psychology, which will manage the project's financial and personnel activities. The three faculty members, their chairpersons, and their deans agree at the time the proposal is submitted that the apportionment of credit for the research will be 40% to Dr. A, 30% to Dr. B, and 30% to Dr. C, and that the same split will be applied to the recovered F&A costs to be returned to the PIs. Because the project's management is being handled by Psychology and collaboration activities will use Psychology resources, they further agree that 50% of the recovered F&A costs to be returned to the departments will be allocated to Psychology, 25% to Nursing, and 25% to Computer Science. Finally, they agree that the recovered F&A costs to be returned to the colleges will be divided equally. The proposal is selected for an award, which is set up in Psychology. At the end of the first year, the annual report of the university lists a \$300,000 award to Psychology and the College of Liberal Arts with Dr. A's name, a \$225,000 award to Nursing and the College of Nursing and Health Sciences with Dr. B's name, and a \$225,000 award to Computer Science and the College of Science and Mathematics with Dr. C's name. Of the F&A costs that are recovered, \$78,896 is returned as follows: 10% or \$26,298 is returned to the units, in this case \$8,766 to each of the three colleges; 15% or \$39,448 to the departments, in this case \$19,724 to Psychology (50%), \$9,862 to Nursing (25%), and \$9,862 to Computer Science (25%); and 5% or \$13,150 to the PIs, in this case \$5,260 to Dr. A (40%), \$3,945 to Dr. B (30%), and \$3,945 to Dr. C (30%).

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