



# Communicator

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## COMPARING THE COSTS OF ALTERNATIVE STRUCTURES OF GRADUATE SCHOOLS: CENTRALIZED VS DECENTRALIZED

### INTRODUCTION

In a challenging economy, centralized graduate schools are sometimes asked to justify their existence. Our university has asked the graduate school to analyze the differences between centralized and decentralized administration of graduate education. My purpose in this paper is to use my university as a case study and provide a summary of four empirical ways through which universities can estimate the true financial impact of adopting alternative models for administration of graduate education. More detailed analyses and data on which this paper is based can be found at:

<http://www.cgsnet.org/Default.aspx?tabid=362>. The methodologies developed here compare the cost of centralized and decentralized administration of graduate education. We use four different methods for calculating the cost implications of eliminating the graduate school and distributing its functions to other administrative units. All four methods use data that are typically available at all universities. Indeed, the data used for illustration in this paper are real data from my university. Collecting the data needed and performing the calculations should not require more than a few hours.

The four methods and the resulting estimates of cost are:

1. Cost Allocation method: This is based on an analysis of the university costs as well as data from the university budget. Decentralization results in an increased net cost of \$70,323.

2. Functions Analysis method: This is based on an analysis of the functions performed by the staff of the graduate school and the resources that would be needed to perform those functions by other administrative units. Decentralization results in an increased net cost of \$389,061.

3. Comparative Data method: This method uses data from other universities to compare the staffing requirements of universities that have centralized versus decentralized models. Decentralization results in an increased net cost of \$260,034.

4. Extrapolation method: Using data on the administrative infrastructure supporting an existing program (the MBA program), we extrapolate to estimate the needed resources of a decentralized administration. Decentralization results in an increased net cost of \$587,896.

It should not be surprising that the cost of decentralized administration of graduate programs exceeds the cost of a centralized office. A centralized office allows for economies of

scale. It is because of this that the vast majority of universities in the US have centralized administration.

In addition to these financial costs, there are non-monetary costs resulting from the reduction in the quality of service to the graduate students, and these should be considered in making decisions regarding the administrative structure. Centralization of the functions allows for division of labor and specialization among staff resulting in each member of the staff developing the knowledge and expertise that would not be possible if a part-time staff person in each department or college has to handle all of the different functions.

Furthermore, consistency in applying the standards and uniformity in the treatment of students are less likely with the multiplicity of administrative loci, as each unit's interpretation of the standards and processes will likely be different from others. The lack of consistency and uniformity in applying the standards increase the likelihood of grievances and legal challenges to administrative decisions. Experience shows that adjudicating grievances and litigation can be costly to the university.

### DETAILED ANALYSES

#### 1. Cost of the Graduate School

In all four analyses we use data from the 2011 graduate school budget and the following assumptions:

#### Budget

The graduate school base budget for administration consists of the following items:

- Staff salaries and fringe benefits:
  - Dean, .50 FTE
  - Assistant Dean, 1.00 FTE
  - Classified Staff, 3.00 FTE
- Operating funds

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## Comparing the Costs

### Assumptions

- We exclude operating funds as they are funded out of application fees, and we assume that the unit that will perform the admission function, the Office of Admissions, will need these funds for operations as it does with undergraduate application fees.
- We exclude the salary and fringe benefits of the .50 FTE Dean as this will be shifted to other units in the university: the dean holds an appointment as vice provost and is a tenured professor. Shifting the salary to other units will not result in any savings in the university budget other than savings resulting from reducing the cost of three sections covered by adjunct faculty.

### Maximum Gross Budget Savings

Because the three classified staff members are covered by collective bargaining agreements and have seniority in their classifications, the university will need to transfer them to other positions where the incumbents have less seniority (bumping). The re-assignment of the 3.00 FTE positions would result, after the successive bumps, in reducing employment at the university by 3 positions with salaries and fringe benefits totaling \$147,278. Adding to this the salary and fringe benefits of the assistant dean, and the savings from three class sections that would be covered by the dean (\$12,000) the maximum gross budget reduction resulting from the elimination of the graduate school is \$245,628.

To arrive at the net impact on the university budget we must account for the costs that are shifted to other units as a result of shifting the various functions to them. We calculate the costs to the other units and, thus, the net impact on the budget in four different ways.

## 2. Calculation of Net Budget Impact

### Method 1: Cost Allocation

The Business Division recently completed a cost allocation study for 2010. This study is required periodically by the federal government for the determination of the indirect cost rates. We use the data on cost allocation contained in that study, supplemented by data from the university's budget to estimate the cost to other administrative units to whom the functions currently performed by the graduate school are transferred.

To estimate these costs we make three assumptions:

- The functions currently performed by the graduate school staff will need to be performed by the staff in the other units.
- The support staff members in the colleges, departments and units within Student Affairs are currently fully utilized.
- The administrative cost per student is the same for graduate and undergraduate students. This is a conservative assumption as the variety and complexity of graduate program requirements typically demand more administrative effort.

### Net Budget Impact Estimate:

The *Cost Allocation Study* shows the cost of academic departments' administration (20% of deans and chairs costs) as \$1,568,631. The support staffs in the departments are not included.

The university's FY 2011 budget shows that in departments that offer graduate programs there were 26.93 FTE support staff members with salaries and fringe of \$1,482,503. The cost of academic support for students is the sum of these two components, a total of \$3,051,134, or \$227.78 per undergraduate student.<sup>1</sup>

If some of the functions performed by the graduate school staff are transferred to academic departments, the support staff cost will increase by \$172,429 (\$227.78 multiplied by graduate enrollment of 757).<sup>2</sup>

To estimate the cost to the Student Affairs Division of handling some of the functions currently performed by the graduate school we assume that there are no increases in cost to the Registrar's Office or to the Financial Aid Office because we have no detailed data that would enable us to estimate these costs accurately.

For functions that would be performed by the Office of Admissions, we estimated the cost as follows: The Office of Admissions processed 11,846 undergraduate applications in 2009 using 24.50 FTE staff. In 2009, the graduate school processed 1,130 applications, or 9.54% of the number processed by the Office of Admissions. If this function is transferred from the Graduate School to Admissions that office will need to increase its staff by 9.54% or 2.34 FTE positions at a cost of \$143,522.

Adding the increased cost to departments (\$172,429) and the increased cost to the Office of Admissions (\$143,522), the total cost of the decentralized system is \$315,951. The estimate of the net effect on the university budget is the difference between this amount and the gross reduction in the university budget as a result of eliminating the graduate school (\$245,628): a net increased cost of \$70,323.

It should be noted that this estimate is a lower bound estimate. We assumed zero cost to the offices of the Registrar and Financial Aid, and we assumed that the administrative cost of serving a graduate student is the same as those for undergraduates.

### Method 2: Functions Analysis

Under this method we analyzed the functions currently performed by the graduate school. We then made a determination as to the most appropriate office(s) to perform each of the functions, based on how close the particular function to the work currently is performed by each office.

### Net Budget Impact Estimate:

Estimate of the additional staff that would be needed is calculated as follows:

- For functions that would be performed by the Office of Admissions, we estimated the cost as we did under Method 1 as an increase in staff of 2.34 FTE at a cost of \$143,522.

- For functions that would be transferred to the Financial Aid office and the Registrar's office we assume, as before, that the additional cost of transferring the functions is zero.
- For the Systems function and the Graduate Council functions, the Office of the Provost is the appropriate locus. We estimate the staffing need for the Provost's Office to be a .50 FTE (the current staffing level) at a cost of \$34,800.
- To estimate the resources that would be required for functions to be transferred to academic departments or colleges we provided the detailed task descriptions to one of the colleges and asked for an independent estimate of the resources that would be needed to perform the tasks. We then scaled those estimates by graduate enrollment in the various colleges to calculate the resources that would be needed by the other colleges. We excluded from the calculations the College of Business and Economics (CBE) which already has support staff for the MBA program. The additional positions needed by departments are then aggregated across colleges, excluding the MBA program, and are found to be 9.78 FTE at a cost of \$634,689.

To check the reasonableness of this method we applied the same methodology to the MBA program: the estimated staff need was found to be 1.13 FTE—compared to the current actual staffing of 1.50 FTE. We conclude that this method provides a reasonable but conservative estimate of the additional staff that would be needed by departments to perform the functions transferred to them.

The net impact on the university budget is the difference between \$634,689 and the cost savings from eliminating the graduate school (\$245,628): a net increase in cost by \$389,061.

### Method 3: Comparative Data

To obtain data on the cost of a centralized versus decentralized organization of graduate schools, we posted a request on the listserve of the Council of Graduate Schools

asking for staffing data from institutions whose graduate program is of a size comparable to that at our university. The data we received appear in Table 1.

While these data do not permit us to compare centralized and fully decentralized structures, they allow us to compare centralized and semi-decentralized structures.

### Net Budget Impact Estimate:

For the two universities that have a semi-decentralized system the average staffing is 1.12 FTE staff per 100 students, that is more than 50% higher than the average for centralized universities (.70 excluding our university).<sup>3</sup> To obtain a conservative estimate, rather than applying the average staffing, we apply the lower ratio of University J (.83) to the enrollment at our university in fall of 2010 to estimate the staffing that would be needed had graduate education at our university been semi-decentralized. The estimate obtained is 6.28 FTE, i.e. adding 1.78 FTE to the existing staff positions at an additional cost of \$116,512.

The report from University J included only the distributed staff to the colleges. Adding the 2.34 FTE that we estimate will need to be added to the Office of Admissions, the total staffing needed for a semi-decentralized system is 8.62 FTE, and the net budget cost is \$260,034.

### Method 4: Extrapolation

The MBA program has an infrastructure support staff. We use the current staffing requirements for the MBA to extrapolate what the other programs would need in order to provide the infrastructure needed if the graduate school functions are decentralized.

### Cost Estimation:

All data in Table 2 are from the 2011 budget. Fall enrollment in the MBA program was 100 students.

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**Table 1. Data on Centralized and Decentralized Graduate Schools**

University	Structure	Enrollment	STAFFING			
			Dean	Assist./ Assoc.	Staff	Total
Our University	Centralized	757 <sup>(1)</sup>	0.50	1.00	3.00	4.50
University A <sup>(2)</sup>	Semi-Decentralized	1,200	0.30	9.00	7.50	16.8
University B	Centralized	1,221	1.00	1.00	5.50	7.50
University C	Centralized	1,171	1.00	3.00	5.00	9.00
University D	Centralized	1,000	1.00	3.00	5.50	9.50
University E	Centralized	1,000	1.00	1.00	4.00	6.00
University F	Centralized	727	1.00	1.00	3.00	5.00
University G	Centralized	1,300	1.00	1.00	3.50	5.50
University H	Centralized	1,000	0.50	1.00	8.00	9.50
University I	Centralized	1,400	1.00	2.00	6.00	9.00
University J <sup>(3)</sup>	Semi-Decentralized	908	0.50	1.00	6.00	7.50

(1) The figure from the Common Data Set is 1,179. This includes students who are in process but are not currently registered for courses and thus not included in enrollment figure shown in table for Fall 2010 enrollment.

(2) University A has a semi-decentralized structure: a small central office with a .30 FTE Dean and .50 Executive Assistant, and at each college an Associate Dean each with support staff totaling 7.00 staff positions.

(3) University J has a central graduate school with .50 Dean, 1.00 Assistant Dean and 1.00 staff. The remaining 5.00 FTE staff is located at the College of Education, the MBA program and the College of Agriculture.

# Data Sources: Trends in Application and Financial Support Deadlines

The 2011 CGS International Graduate Admissions Survey, Phase I: Applications included a series of special questions about application and financial support deadlines for graduate students. The questions were designed to gather information about how deadlines were set and whether there have been any changes to deadlines in recent years. This article presents a brief analysis of the responses to those questions.

## Survey Methodology and Response Rate

In January 2011, a link to the 2011 Phase I survey was e-mailed to the graduate dean (or equivalent) at all 494 US colleges and universities that were members of CGS. A total of 232 institutions responded to one or more of the special questions on application deadlines, for a response rate of about 47%. The analyses presented below are limited to these 232 respondents. They included 164 doctoral institutions, 57 master's-focused institutions, and 11 institutions classified as baccalaureate or specialized in the 2010 basic Carnegie Classifications. Sixty-seven private, not-for-profit institutions responded to one or more of the application deadline questions, along with 165 public institutions. By geographic region, 60 of the responding institutions are in the Midwest, 46 are in the Northeast, 38 are in the West, and 88 are in the South.

## Application Deadlines

Institutions were first asked, "Which one of the following best describes your institution's application deadline(s) for fall admission at the graduate level?" Choosing from among three possible response options, the majority (53%) of the respondents indicated that application deadlines are set by individual programs. Nearly one-third (31%) said that the deadlines are set by individual programs, with a final deadline set by the institution or graduate school. The remaining 17% reported that there is an institution-wide deadline set by the institution or graduate school.

There were no statistically significant differences in responses by Carnegie classification or geographic region, but private, not-for-profit institutions were more likely than public institutions to report that application deadlines are set by individual programs (58% vs. 50%) and that there is an institution-wide deadline set by the institution or graduate school (24% vs. 14%). Private, not-for-profit institutions were less likely than their public counterparts to report that that deadlines are set by individual programs, with a final deadline set by the institution or graduate school (18% vs. 36%).

## Changes to Application and Financial Support Deadlines

The next two questions related to changes in application deadlines for fall admission and/or financial support for graduate students, asking whether any deadlines have changed within the last three years. Since these two questions also addressed financial support—unlike the previous question which just focused on application deadlines—the findings are somewhat different. The first of these two questions collected

data for respondents from institutions where deadlines for fall admission and/or financial support are set by the institution or graduate school, and read as follows: "If deadlines for fall admission and/or financial support are set by the institution or graduate school, have any of those deadlines changed within the last three years?" The second question collected data for respondents from institutions where deadlines for fall admission and/or financial support are set by individual programs, and read as follows: "If deadlines for fall admission and/or financial support are set by individual programs, are you aware of programs within your institution that have changed any deadlines for admission and/or financial support within the last three years?" Ninety-three institutions responded to both of these two questions, presumably because some application and/or financial support deadlines are set by the institution or graduate school and other application and/or financial support deadlines are set by individual programs.

Among the 143 institutions responding to the first of these two questions, thereby indicating that at least some deadlines for fall admission and/or financial support are set by the institution or graduate school, 62% reported that those deadlines have not changed within the last three years. Three out of ten respondents (30%) reported that the deadlines are now earlier, while 8% said that the deadlines are now later. (Eighty-six respondents selecting 'not applicable' and three institutions not responding to this question were excluded from these calculations.) There were no statistically significant differences in responses to this question by Carnegie classification, geographic region, or institutional control.

The respondents to this question were then asked to indicate which types of deadlines changed within the last three years. Among the 43 respondents indicating that deadlines are now earlier, 67% reported that the deadline for international admissions changed, 51% said that the deadline for domestic admissions changed, and 49% said that the deadline for students seeking financial support changed. Among the 11 respondents indicating that deadlines are now later, eight respondents reported that the deadline for international admissions changed, five respondents said that the deadline for domestic admissions changed, and only one said that the deadline for students seeking financial support changed.

Among the 164 institutions responding to the second of these two questions, thereby indicating that at least some deadlines for fall admission and/or financial support are set by individual programs, 37% reported that the deadlines are now earlier, 31% said that some deadlines are now earlier and some are now later, 29% said that the deadlines have not changed within the last three years, and 3% said that the deadlines are now later. (Sixty respondents selecting 'not applicable/not aware of any changes' and eight institutions not responding to this question were excluded from these calculations.) Doctoral institutions were more likely than master's-focused institutions to indicate that deadlines have changed, with more than four



out of ten indicating that some deadlines are now earlier and some are now later, as shown in Table 1. There were no statistically significant differences in responses to this question by geographic region or institutional control.

As with the previous question, respondents were then asked to indicate which types of deadlines changed within the last three years. Among the 60 respondents indicating that deadlines are now earlier, 70% reported that the deadline(s)

**Table 1.** Changes in Deadlines for Fall Admission and/or Financial Support at Institutions where Deadlines are Set by Individual Programs

	<b>Doctoral Institutions</b> (n=115)	<b>Master's-Focused Institutions</b> (n=43)
Deadline(s) now earlier	35%	40%
Deadline(s) now later	2%	7%
Some deadlines earlier, some later	41%	9%
No changes	23%	44%

Source: 2011 CGS International Graduate Admissions Survey, Phase I: Applications

for international admissions changed, 75% said that the deadline(s) for domestic admissions changed, and 40% said that the deadline(s) for students seeking financial support changed. Among the five respondents indicating that deadlines are now later, three respondents reported that the deadline(s) for international admissions changed, four respondents said that the deadline(s) for domestic admissions changed, and only one said that the deadline(s) for students seeking financial support changed. A total of 51 respondents indicated that some deadlines are now earlier and some are now later, and among these respondents the vast majority reported that the deadlines for international admissions (84%) and domestic admissions (88%) changed. More than half (53%) indicated that the deadline(s) for students seeking financial support changed.

## Conclusions

Responding institutions were more likely to indicate that application deadlines for fall admission are set by individual programs, rather than by the institution or graduate school. Institutions where deadlines for fall admission and/or financial support are set by individual programs were nearly twice as likely to report that deadlines have changed within the last three years as institutions where deadlines are set by the institution or graduate school—seven out of ten of the former reported changes to deadlines compared with four out of ten of the latter. The majority of institutions changing deadlines made those deadlines earlier, rather than later. For example, among institutions where deadlines are set by the institution or graduate school, respondents indicating earlier deadlines outnumbered respondents indicating later deadlines by a factor of four to one.

The data presented here are admittedly from a relatively small sample of the institutions that award graduate degrees in the United States. And since the data were collected through a survey that primarily gathers data on international students, the responses may not be representative of all institutions, particularly those with smaller numbers of international students. That being said, the data suggest that there may be a trend toward earlier deadlines for applications and financial support at US graduate schools, and furthermore, that this change affects both international and domestic students. More information is needed, however, to interpret the true meaning of this finding. For example, the survey did not collect data on the actual deadline dates, so it is unclear how much deadlines have shifted (e.g., by one week, two weeks, etc.). The reasons for changes to deadlines are also not fully known. Changes to deadlines may have been made to align an institution with the deadlines of other institutions, to differentiate an institution from others, to align various deadlines within an institution, or for any other number of reasons. While the survey data do not illuminate the reasons for changes to deadlines, they clearly show that some institutions and graduate programs are making changes to deadlines for fall admission and financial support.

By Nathan E. Bell, Director, Research and Policy Analysis

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 For Graduate Deans and  
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## Comparing the Costs

Before we apply this infrastructure cost to other graduate programs, we adjust it downwards: because the faculty salary levels in CBE are higher than in other colleges, we reduce the cost of the Program Director by 50%. With this adjustment, the infrastructure support needed by graduate programs is estimated at 1.5 FTE and \$123,125 for every 100 graduate students.

**Table 2. Infrastructure Support for the MBA Program**

Position	FTE	FTE/100 Students	Cost/100 Students
Program Director	.50	.50	\$91,543
Assistant Program Director	.50	.50	\$32,042
Program manager	.50	.50	\$30,311
Operations			\$15,000
TOTAL		1.50	\$168,896

We apply these figures to enrollment in each of the graduate programs, excluding the MBA. We exclude programs with enrollment of less than 5 on the assumption that their needs can be met by other programs in the college.

Aggregating over all the programs we get a total staff requirement of 10.20 FTE at a cost of \$833,524.

This staffing requirement is within the range of staffing at University A and University J, the two semi-decentralized graduate schools, and is also quite close to the estimate obtained by Method 2 (9.78 FTE). The fact that two completely different methods produce such close estimates is reassuring of their validity.

The estimated impact on the university budget using this method is the \$833,524 less the budget savings from eliminating the graduate school (\$245,628), or a net increase in cost of \$587,896.

### CONCLUSION

All four methods used to estimate the implications of decentralizing the administration of graduate education, in spite of the conservative assumptions we used, lead to the same conclusion: significant financial costs will result should the university eliminate the graduate school and distribute its functions to other support units.

In addition it is likely that the number of grievances and legal challenges will increase as it is likely that the different programs will not apply the policies in a consistent manner, and this is likely to be costly.

*By Moheb Ghali, Vice Provost for Research and Dean of the Graduate School, Western Washington University*

### Endnotes

<sup>1</sup>We calculated this figure on the basis of undergraduate enrollment because departmental administrators serve the needs of those students, while the graduate school staff serves the needs of graduate students. The numbers of students both undergraduate and graduate are those reported by the university in the Common Data Set.

<sup>2</sup>This is an underestimate since we multiply by the actual fall 2010 enrollment rather than the total enrollment of 1,179 which is the number of all graduate students, including those who did not register for credits in fall of 2010.

<sup>3</sup>Our university has an average of .59 and including it would have lowered the average for centralized graduate schools.

## An Update on the Project for Scholarly Integrity and New Tools in the RCR Toolbox

At the 2011 CGS Summer Workshop in Monterey, California, a technical workshop on “New Tools in the RCR Toolbox” will highlight new tools and practical strategies that have been used by awardees and affiliates in the Project for Scholarly Integrity. The workshop will be held Wednesday, July 13 from 9 am to noon and will include discussion of assessment tools and strategies for using data to enhance program goals, and a new ORI video resource, *The Lab*, created to generate awareness, interaction, and discussion among campus groups engaged in different aspects of the research enterprise. The workshop will emphasize approaches to assessment developed through the Project for Scholarly Integrity (PSI). This update describes the PSI approach to assessment, focusing on two instruments developed out of the project or through collaboration with participating PSI graduate schools: the *Research Integrity Inventory Survey* and the *Survey of Organizational Research Climate*.

### Background

For nearly a decade, CGS has been committed to working with member institutions to enhance the preparation of graduate students for the ethical challenges and responsibilities of research and scholarship in their chosen fields. Since 2003, CGS has administered sub-awards to 22 universities (and worked with 44 affiliates) to develop and assess responsible conduct of research (RCR) programs and resources. The first initiative, supported by a contract with the Office of Research Integrity (ORI), resulted in 10 projects to develop and evaluate such programs. The CGS publication *Graduate Education for RCR* (2006) discusses the rationale behind their development, and includes six best practices for program start-up. The second CGS initiative, funded by the National Science Foundation (NSF), resulted in 6 additional projects (and expanded activities at two universities that participated in the initial ORI-funded project). The resulting publication, *Best Practices in Graduate Education for RCR* (2009), provides

recommendations for expanding such programs to NSF-funded fields and discusses how to optimize them for doctoral and master's-focused institutions.

The Project for Scholarly Integrity, the third CGS initiative in this area, was created to foster the development and assessment of programs that are comprehensive (as opposed to piecemeal), collaborative (as opposed to dependent on any single campus unit), sustainable, and attentive to a variety of needs in the graduate community. The PSI builds upon prior projects by using lessons learned to shape awardee requirements and activities. In the initial stages, a planning committee identified core components of a comprehensive, institutional approach to advancing research integrity through graduate education.

The five-stage PSI framework that resulted was intended to be flexible enough to allow for innovation and institutional differences, but structured enough to facilitate the mutual exchange of ideas and information among participating universities. The framework is premised on the notion that genuine, positive culture change at an institution involves effective leadership at all levels and at every stage. The leadership of graduate schools, in particular, is encouraged to:

1. Engage the community in identifying needs,
2. Invite key stakeholders to reflect on a plan for action,
3. Act on those reflections,
4. Communicate to the broader community about activities and their ongoing impact, and
5. Integrate activities to ensure greatest impact and sustainability.

This framework provided the structure for activities undertaken by the seven awardee institutions: Columbia University; Emory University; a consortium composed of Michigan State University, Pennsylvania State University and the University of Wisconsin-Madison; the University of Alabama at Birmingham; and the University of Arizona. As the PSI is funded by ORI, the target beneficiaries are graduate students in the biomedical and behavioral sciences. However, as the project evolved, every awardee university elected to scale up many of their activities to reach across the disciplines.

#### A Common Assessment Strategy

One key component of the PSI is a common assessment strategy shared by all awardees. Such a strategy allows participants to identify institutional needs, promote cross-campus dialogue about possible solutions, and compare approaches to meeting those needs with other institutions. Graduate schools can use data to identify curricular gaps in specific graduate programs and colleges and potentially remedy differences in perception between faculty and students about the quality of RCR training. In the future, this approach may also facilitate evidence-based discussion about best practices.

The PSI assessment strategy builds on some of the results of prior CGS RCR initiatives. The CGS 2009 publication concluded by recommending a three-tiered approach to assessment:

1. An assessment of the institutional climate for research integrity;

2. An "inventory of institutional practices in RCR education"; and
3. Student "learning and retention" of the knowledge and principles acquired (CGS, 2009, p.39).

The PSI established common instruments in the first two of these three areas.

#### 1. The Survey of Organizational Research Climate

A common assessment of the institutional climate for research integrity was a key component of the PSI. When the consortium of Michigan State University, Pennsylvania State University, and the University of Wisconsin-Madison proposed to work with researchers Carol Thrush and Brian Martinson to develop a climate instrument as part of their PSI project, CGS inquired about the possibility of field-testing it across all PSI awardee institutions. The consortium team agreed and the seven awardees adopted, with permission, a pre-validated version of the survey developed by Carol Thrush and Brian Martinson et al., working in close collaboration with the consortium. The survey was administered to a broad spectrum of groups that comprise each institution's research enterprise, including graduate students, faculty, research staff, postdocs, and others. Awardee institutions are using findings from these surveys in combination with findings from another CGS-developed instrument described below to engage the community, assess needs, and evaluate resources and activities. CGS is analyzing aggregate findings from both surveys to provide benchmarking guidance and to better understand baseline curricular and policy conditions and perceptions. The survey will be administered a second time in 2011-12. The broader goal of this combined effort is to evaluate the effectiveness of university interventions and activities over time and inform national understanding of the institutional factors that shape the environment for scholarly integrity and education in the responsible conduct of research.

As of March 2, 2011, the final, validated *Survey of Organizational Research Climate* was released by its developers for public use and has been made available under a Creative Commons license. Karen Klomparens, MSU graduate dean, presented on the development of the climate instrument and on its use by the three-university consortium at last year's CGS Summer Workshop.

#### 2. The Research Integrity Inventory Survey

The *Survey of Organizational Research Climate* provides the most comprehensive picture to date of the perceptions of faculty, students, and others of the research climate for research integrity. As such, it is an essential tool for graduate schools seeking to develop programs that address the role that climate plays in the professional socialization of scholars. A second instrument developed by CGS, the *Research Integrity Inventory Survey*, answers the recommendation for a second-tier instrument and gathers information about the scope and nature of activities and resources at graduate institutions and in programs and other campus units. The survey's 12 questions ask about resources already in place before the PSI interventions were fully implemented, areas of RCR and research ethics addressed, and policies and activities to address graduate student needs and issues. Awardees were asked to

administer the survey to the individual most knowledgeable about program policies and curricula (typically a department chair or director of graduate studies). Several awardees reported that this instrument provided the most comprehensive data on RCR and research integrity activities ever collected by their institutions, and helped them prepare for new requirements for graduate RCR training by federal funders. The survey will be administered again in 2011-12. A brief report on preliminary analysis of data from 240 programs at 6 universities will be included in the 2011 Technical Workshop.

### 3. Assessment of Graduate Student Learning and Retention

Currently, there is no common instrument for assessing graduate student learning in research and scholarly integrity across a diverse range of programs. PSI awardees expressed a willingness to field-test one instrument under development, but it was not ready in time for implementation. A better definition of graduate outcomes in this area and instruments for broad adoption will be important for future “best practices” work.

### Conclusion

In addition to serving the broader goals of the project, PSI awardees and affiliates have made important strides in addressing many of the assessment needs identified by the National Academies report on *Integrity in Scientific Research* (2002):

- No established measures for assessing integrity in the research environment exist.
- There is a lack of evidence to definitively support any one way to approach the problem of promoting and evaluating research integrity.
- Institutional self-assessment is one promising approach to assessing and continually improving integrity in research (National Academies, 2002, p. 3, as cited in CGS, 2009).

While assessment is by no means the central activity of the PSI, the administration of the two surveys described above, analysis of survey data, and subsequent conversations between the graduate school and colleges and departments are providing participating universities with techniques for achieving progress on internal and collective objectives.

The instruments described in this article are accessible through the Project for Scholarly Integrity website ([www.scholarlyintegrity.org](http://www.scholarlyintegrity.org)). These and recommendations for their use will be described in greater detail in a CGS forthcoming publication on the PSI (expected end of 2011), along with analyses of aggregate PSI data. PSI project staff are happy to assist institutions curious to explore using these tools to assess institutional needs and enhance educational programs in research and scholarly integrity for graduate students.

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