

Meeting the Needs of

Graduate Students



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April 18-21, 2006

Midwestern Association of Graduate Schools

Proceedings of the
62nd Annual Meeting

Meeting the Needs of
Graduate Students

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April 18-21, 2006

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The Place of Graduate Education

Sylvia Manning
University of Illinois at Chicago
Office of the Chancellor
2833 UH MC 102
601 Morgan, Chicago, IL 60607-7128
manning@uic.edu

Abstract

Some graduate deans see public indifference to graduate education mirrored inside their institutions. Graduate students see the same thing, and increasingly respond by seeing themselves as employees. There are serious problems with graduate education that we need to address: proliferation of programs, time-to-degree, diversity, disciplinary silos. That acknowledged, we must also assert the multiple ways in which graduate education is important and valuable to the academy and to society.

The Place of Graduate Education

I attended graduate school at Yale in the mid-sixties. It was the time of the Vietnam War, but the protests were just beginning – candlelight vigils on the green of interest to only a few students.

Graduate students were poor. Most of us lived on meager stipends, fellowships, or borrowing, in low-rent apartments we furnished from Goodwill and shared with colonies of cockroaches. We didn't own cars or computers or elaborate music systems. We were impervious to fashion and so did not buy clothes. We were driven and rather insecure.

But poverty was also one sign of our superiority, especially to all our friends in law school or medical school. And a car in New Haven would have served little purpose, there being nowhere to go. We didn't need to buy cell phones or DVD's or even a Walkman because they hadn't been invented yet. What was more, we were special. Men in graduate school had draft deferments, because their potential as professors was too valuable to be sacrificed even to a stateside desk job. We were expected to finish our doctorates in at most four years, because we were needed out there, needed to teach. Most of us would graduate with multiple job offers in hand. We suffered a great deal of certainty, bred in part of insularity, that covered over our insecurity quite well. It was a time we would look back on, as I do at this moment, with considerable nostalgia.

At Yale at that time, and for decades to come, the center of the world was Yale College. And before co-education came to the College, women were

fairly invisible throughout the university, though enrolled in the graduate and professional schools. The marginality of women was manifest then in a branch of Saks Fifth Avenue that sold only men's clothing and a campus health service that was willing but incompetent to treat women. The marginality of the graduate school became apparent to me many years later when I learned that my children, though both their parents held doctorates from Yale, would not be given alumni-legacy status in their applications as undergraduates.

But to those of us there, in graduate school, at the time, all that hardly mattered. Yalies, the undergraduates, might be the center of some universe of their perception, but they were also too young, too immature, and visibly diminished by their quasi-monastic lives. At that time, Yale still maintained a distinction between graduate faculty and those who did not teach the graduate courses: only the best of the best were good enough for us. And the graduate faculty knew that they were about something important, about preparing the doctorates that the nation needed so much. Though I have no evidence, I assume the graduate dean was happy too.

By the early seventies, things had begun to change, across the country and even at Yale. In a very short period, we went from a shortage of university faculty to a glut, signaled in the Woodrow Wilson Foundation's decision to cease direct funding of graduate education. With the drying up of virtually all sources of fellowship support in most fields, TAships and RAships became the dominant mode of student support. TAships, as we all know, would become especially problematic: the more you taught, the longer it took to complete your degree; the longer it took to complete your degree, the more it cost; the more it cost, the more you needed to teach. A perfect vicious circle. And gradually, it became the norm at major research universities for TAs to teach the introductory courses. And it came to seem wrong, or unusual, or strange, for regular faculty to teach those courses. Sometimes graduate programs were sustained or grew in order to support the apparent need for a certain number of TAs. In the worst of the job years in the humanities, few Ph.D. programs were cut or shrunk. They were supported by the tuition paid by undergraduates and the state appropriations paid for undergraduates, as they have remained. Perhaps inevitably then, TAs came to see themselves more as the teachers of those undergraduates than as students, then as employees, as employees paid a subsistence wage and otherwise not respected, and ultimately as employees who ought to bargain collectively.

And thus graduate education per se receded into the background. The situation is not quite as dire in the natural sciences and fields like engineering, where graduate students are similarly supported but through RAships, largely because the work of the RAship can be and often is co-terminous with work for the dissertation, an intrinsic part of the education. Although RAs do present a cheap labor force for sponsored research, the RAship retains much of the character of apprenticeship. Besides, in many places it is actually cheaper, or would be, to hire postdocs than RAs. The graduate students themselves show us the difference, as repeatedly in unionization drives, the RAs remain content to stay outside the proposed bargaining unit.

In addition, few institutions retain any formal distinction between graduate faculty and faculty not authorized to direct graduate study. That, I believe, is an entirely good thing, but it does contribute to the phenomenon I am tracing, which is the gradual but steady transformation of the perception of what we call the Graduate School or Graduate College. It has long ceased to be a School or College in the sense that faculty are appointed to it.

In what sense, then, does it remain? In some institutions, it still controls admissions, at least in that it sets minimum standards that departments are free to exceed. In some institutions, it is the determiner of various rules, such as those governing residency, time limits, and credit hour requirements. In some it also governs rules that seem more purely bureaucratic, such as style manual and margin requirements for dissertations. In some, it hands out such fellowship and other financial support as the university provides directly to graduate students. In some, but few, it protects graduate students the way student affairs units protect undergraduates, serving as their advocates against rigid bureaucracy or departmental indifference or impractical assumptions built into health insurance plans.

None of those things make the Graduate School much of a force to be reckoned with by the College of Liberal Arts and Sciences, or the School of Engineering. But perhaps that doesn't matter. Perhaps we don't need graduate schools to focus or promote or protect the importance of graduate education. Perhaps we could ensure the various standards for graduate education through the same mechanisms we use for undergraduate education, namely trust in the faculties of the various schools and colleges and departments and oversight through an academic senate and its committees. Perhaps we could ensure the welfare of graduate students outside their academic requirements through the same student affairs services we provide for undergraduates. After all, many post-baccalaureate professional programs are left to such mechanisms, without an umbrella organization such as the Graduate School to keep students out, let them in, structure their programs, or dole out their support.

And if we don't need a Graduate School, do we need a graduate dean? Apparently, some institutions have recently decided that they don't, and graduate deanships are being eliminated, especially at institutions where the graduate programs are predominantly or entirely master's programs and not Ph.D. programs. The trend is surely driven by financial necessity, which has been extreme in more places than not lately, but nonetheless it suggests a message, and the message threatens the place of graduate education in the institution.

I want to pause for an anecdote of something that occurred at UIC a few years ago that I still don't really understand but that seems germane here. Weekly, as often as I can, I meet with a department on campus for an hour and a half or so. My purpose is simply to hear what the faculty in whatever department it is have to say at that time. This one was a meeting with a department in the College of Medicine. A few members of the faculty were expressing dissatisfaction with the distribution of their time. They talked about the demands on them, their desire to do more research, and then, their need to teach not only their "own" students, the MD's and residents, but the "Graduate College's students." I was puzzled. It turned out that these "Graduate College" students

were the Ph.D. students in their department.

"You admit them?" I asked. "Yes." "You decide who gets in?" "Yes." "You set the curriculum and the degree requirements?" "Yes." "You teach all the courses?" "Yes." "You decide who gets the degree and who doesn't?" "Yes." "But these aren't your students?" "No, they aren't; they're the Graduate College's." To me, that's a through-the-looking-glass moment.

This point of view, though, may tell us something about a troublingly broad failure to recognize graduate education. When I was talking to Mary Beadle a few weeks ago, about what she thought I ought to be addressing in this talk, I opined that the public understands baccalaureate education and generally recognizes professional education, at least when reminded, but is probably blind to graduate education. She answered saying that it's somewhat like that inside the academy too.

Though I'm not sure I would agree regarding the academy—despite my experience in that department in Medicine—, in public perception I know that graduate education is invisible at best. In a former role, as vice president for academic affairs for the University of Illinois system, I spent many hours explaining to legislators and legislative staffs why it was that such a huge percentage of graduate students "don't pay tuition." I would explain that some of these waivers are part of a fellowship but most are compensation for services the students perform. If we charged these students tuition without increasing their stipends they wouldn't come. If we increased their stipends, we'd have to increase by the price of tuition plus at least 18% because stipends are taxable. And whoever I was talking to would understand. And next year, the same question would come back, in the same form: Why don't the graduate students pay tuition?

Inside the academy, various factors seem to contribute to the marginalization of graduate education qua graduate education. Any sort of half-baked responsibility center management (and of course full-baked as well) will see graduate education as a cost center rather than a revenue center. (This is avoided when a strong continuing education program is combined with graduate education.) In the drives to unionization, graduate students may appear to be presenting themselves as employees, rather like adjuncts, who happen to be taking classes, rather than as students who happen to be employed in order to support their education. Certainly we see that in Illinois, where state labor law does not allow students to bargain collectively and so the organization that has fought for collective bargaining at the University of Illinois omits any reference to students in its name: it is the GEO, the Graduate Employees Organization.

Years of a stubbornly bear employment market for Ph.D.'s have made many of the faculty reticent to proclaim the value of that education. Furthermore, graduate education, by most definitions apart from graduate professional education such as MBA or Master of Engineering programs, largely is the advanced version of liberal arts and sciences, and so the public bent towards professional education even at the undergraduate level rubs off on graduate education, and we reflect it, even without meaning to, in the academy. And then of course there's the elimination of graduate deanships.

All that is pretty dire. Yet against it all, there stands one irreducible fact in which all who are committed to graduate education should take great comfort: we need graduate education.

That said, let me pause before elaborating on the need to say one more thing on the negative side, which is that we have often wanted graduate programs, and therefore believed we needed them, for the wrong reason. I alluded earlier to the desire to provide TAs for introductory courses as driving the size of doctoral programs. There are other wrong reasons.

I started my career at an institution that was then called California State College at Hayward. After a few years it became California State University, Hayward. A physicist colleague of mine stuck her head in my door that morning to announce that overnight we had gone from being a 3rd-rate college to a 4th-rate university: hurrah! We were ironic, though someone in Sacramento presumably was pleased. When I arrived at the College at Hayward, we had a master's program in my department, as in several others. The most academically elitist of our faculty put inordinate emphasis on that program. The students who came to it for the most part were either high school teachers seeking to improve their knowledge of the subject or people intending to move to a Ph.D. program elsewhere. Both entirely honorable and worthy purposes.

But some people in the department really wanted to be able to offer a Ph.D. They looked at our numbers and quality and said, Why not? But of course the real question was, Why? And the true answer, I suspected then and still do suspect, was, Status. California's strongly demarcated three-tiered system—the University of California, the State Universities and the Community Colleges—has many advantages, but if you are in either of the two “lower” systems and don't genuinely buy into their mission, you live in the shadow of the U of C. And the U of C, which once resisted extending library privileges to Cal State faculty, has ways of enforcing that sense of inferiority.

To the best of my knowledge, that drive to doctoral education persists in the Cal State system, even at the system level, even though softened to doctoral degrees other than the Ph.D. I am fairly convinced that if I were there I would not want it, would not join with the advocates. I don't think we need more doctoral programs in this country, though we may very much need more doctoral candidates in some existing programs.

I do believe that we very much need master's programs, and that there is no reason to limit master's programs to doctoral institutions. We need them as stepping-stones to doctoral education for students who, for whatever reason, are not prepared to make the plunge directly from baccalaureate to doctoral, even though the latter may offer a very desirable shortcut. And we need them in their own right, for candidates ranging from the school teachers we attracted at Cal State to the people increasingly needed in our knowledge-based industries. It would be wonderful if we could produce bachelor's degree holders of sufficient expertise to staff the creative end of our info- and biotech industries, but we can't, and won't at least until we solve the secondary education problem of the nation. We need terminal master's degrees for these workers. We have known that for a long time in engineering, and we have begun to understand it in the natural sciences. These are not professional degrees, but degrees that will offer the

advanced education that will then allow the graduates to adapt to whatever new developments science and technology may bring.

And then on the side of culture, of the civilization we care for beyond getting and spending, beyond industry and business, beyond economic well-being and healthcare, we should have master's programs as well, programs for people who simply want to continue their liberal education, who want to learn because they are curious. But I would concede that such programs should pay for themselves or be assisted from philanthropic rather than governmental sources.

On campus, graduate programs and graduate students set the bar. Through their more advanced education, they stand comfortably between the faculty and the undergraduates. On a campus where the undergraduates are of traditional age, the graduate students' greater maturity contributes as well. As TAs they enjoy the advantages of relative youth and greater proximity to the culture of the traditional-aged students they teach. With luck, they also convey a neophyte's enthusiasm for the field. As RAs they represent the future of the science and they contribute ever-fresh perspectives on the problems at hand.

There's nothing wrong with advanced graduate students teaching undergraduates. What has been wrong has been our failure to train and supervise them, and over time that failure has become more the exception than the norm it once was. On campuses where doctoral students contribute significantly to the teaching of undergraduates, that contribution, rightly managed, should be an advantage, not merely a necessity. Yes, the TAs inevitably lack experience. So do young surgeons and dentists and lawyers: there are compensating qualities.

To protect our graduate education, though, we need to acknowledge its present shortcomings and to work for improvement. The need to do so may be the best argument for continuing the position of graduate dean or equivalent (such as vice-provost for graduate studies). Let me list four shortcomings that are on my mind.

I will treat first the one that is probably most controversial and most politically incorrect. In my personal view, the growth of graduate employee unionization has been unfortunate. I see it as the consequence of the academy's failure to deal appropriately with its graduate students. Certainly that was the case where I witnessed the development and ultimate victory of collective bargaining at closest hand. The university was simply unenlightened in its treatment of graduate students, and for that it got what it deserved. (By "unenlightened" I mean fairly simple things: failure to define work obligations clearly, failure to create a medical insurance plan that recognized the fact that large numbers of graduate students are married with children, and so forth.) But deserved or not, or even outside the category of desert, unionization makes graduate students into employees and less about graduate education.

Unionization also both arises in part from and contributes to the second problem, and that is time-to-degree. It was one thing to be poor (and, for most of us, single) for 4 years when my generation was in graduate school ages ago; it's another thing to contemplate poverty for the 8-10 years it usually takes today to get the degree, as students move well into the latter child-bearing years.

Unionization in part arises from the lengthy time-to-degree that has become the norm and also contributes to it by taking up time on the part of students who work on it and by contributing to a culture of lengthy expectation.

Think of a life path. Good public universities graduate most of their students in 5 years: age at completion, 23. A year off to work and deal with some of your undergraduate debt: age, 24. Nine years in graduate school: age, 33. Seven years to tenure: age, 40. There's nothing wrong with that, except that you are middle-aged by the time you are fully fledged in your profession. As an outlier, that's probably acceptable. As the norm, it's bad.

Compare law school. Some people spend four years in daytime law school because they are adding a master's degree in another field. Most spend three. Certainly, there are night programs – now fully accredited – and those take longer, often twice as long, but usually people in those programs are fully employed during the day. And of course very few of them will go on to an academic career, with its protracted period of initiation.

A third short-coming we must address has to do with the diversity of the students in our graduate programs. For the most part, it is much less than that of our undergraduate programs. There are good reasons for this, of course. The system is a funnel. Undergraduates from under-represented groups are more heavily first-generation college, and first-generation college students are more likely to go directly to work or to professional education. Etc. These are good reasons, but not good excuses, and we have to think more deeply about what to do, if only because graduate school is the funnel to the professoriate.

And finally, there is the problem of disciplines. I won't elaborate that issue now, because you all know it as well as I do. We are succeeding more and more, I believe, in allowing or assisting faculty to move beyond their disciplinary confines to the boundaries where the ground-breaking research and scholarship are being done, but we have not succeeded nearly as well with our graduate students. Again, there are good reasons for that, but there are also undesirable consequences. Can we accelerate the natural, slow pace of this development?

To improve where we have these and other short-comings is important in so far as graduate education is important. UIC has about 16,000 undergraduates, 6,000 graduate students, and 3,000 professional students. As chancellor, I speak in public much more frequently about undergraduates and professional students than I do about graduate students. The undergrads are what the general public understands and responds to, and I am interested in its tax dollars. I speak a lot lately about professional students because in the health professions, which are the dominant professional colleges at UIC, education in Illinois is woefully under-funded, affecting the entire campus, and I believe I have a better chance of correcting that problem by scaring people with the specter of health-provider shortages than by any higher-road approach.

But make no mistake: I think that graduate education is fundamental to the kind of place UIC is and aspires to be. At both master and doctoral levels, it is part of our mission. It also contributes to the kind of educational opportunity we offer our undergraduates, and that too is part of our mission. We aspire to be the nation's premier urban public research university and we couldn't be that without graduate education.

Issues in Non-Traditional Graduate Education

Gail Scukanec, Facilitator
Interim Dean, College of Graduate Studies
Central Michigan University

Marcia Bankirer
President, Argosy University/Chicago

Bill Berry
Associate Dean, College of Graduate Business
University of Phoenix

Jim Wold
Dean, School of Education
Capella University

Abstract

Many students are now pursuing graduate studies through non-traditional means of delivery. Some of the issues that must be addressed are specific to the delivery mode, such as interactivity between students and students and the student and the instructor in an on-line environment. Other issues, such as academic integrity and student preparedness, are not specific to the mode of delivery, but may present differently in an on-line course relative to a face-to-face format. A number of questions related to both types of issues were posed to the three presenters.

Interactivity

While it is not always so, we assume that there is interactivity between students and students and instructors in a traditional face-to-face course. When we are dealing with courses that are not delivered in traditional face-to-face format, how do we ensure there is the opportunity for interactivity? How much interactivity is sufficient for the student in order for the student to achieve the specified learning outcomes?

It is important that the form of interactivity in graduate education transfer to the business/job world. It is also important for graduate students to learn to collaborate and, therefore, the interactivity should promote that type of skill. In providing content, faculty-to-student, as well as student-to-student and student-to-faculty interaction is the key for both on-line and face-to-face courses. In the on-line environment, we often establish clear metrics that we can use with a certain amount of subjective assessment in order to evaluate the levels of these

interactions. In fact, we can do this much better in an on-line environment as the communications take a clear form in the written messages. Moreover, we can provide quality assurance with less interference through external monitoring of these classrooms. In the on-line environment, we have the ability to provide and assure high levels of interactivity.

There is an additional benefit. In traditional face-to-face class students who process information differently may either lead or follow. In an asynchronous on-line environment all students are engaged; therefore, students cannot “hide” in the back row.

Academic Integrity

Preserving academic integrity is a critical goal of higher education. What are the specific issues related to ensuring academic integrity in non-traditional educational formats and how do you deal with those issues?

As in a face-to-face environment, in a quality on-line educational experience the student and faculty member develop a relationship. This enables the instructor to evaluate a student’s work as a student moves through a course or courses and, as such, “know” the student’s work. Conversely, the instructor “knows” when work is not the student’s. Constructive assessment also promotes academic integrity. Academic integrity is easier to ensure with testing because tests can be monitored by a proctor.

Student Preparedness

How do we evaluate and/or ensure learner readiness for alternatively delivered graduate education?

Students may be poorly prepared for the demands of graduate education for a number of reasons such as time since last degree was earned or lack of specific skills developed during undergraduate studies. Some institutions providing graduate education opportunities to non-traditional students utilize writing assessments outside of courses or evaluate writing skills during a student’s first graduate course and then provide one-on-one writing assistance to students in need. Many institutions also provide technical support to students through on-line tutorials. Academic counselors are often employed to work with students to ensure students are prepared for the rigors of graduate education. Orientation programs have been developed by institutions which more specifically address the academic preparedness required by graduate courses and on-line environments. Students must understand that on-line learning environments are different from traditional classroom environments but they are not “easier” than those traditional environments.

Faculty Readiness

How do we evaluate and/or ensure faculty readiness to teach through alternative course formats, as on-line courses?

While student readiness is crucial for on-line learning environments, faculty preparedness is as important if not more crucial. Institutions moving to on-line education must train faculty or ensure faculty have already been trained in terms of how to communicate in this venue. In this sense, training for students and faculty may be somewhat similar. Faculty need to know how to set expectations within an on-line learning environment. They must understand that one of the benefits of the on-line environment is that students have more time for reflection, in other words, students think more about the material and about other students' responses prior to responding. That can certainly enrich the on-line discussions and require deeper thinking and responding on the part of the instructor. Some institutions require that faculty take an on-line course prior to teaching such a course. Since instructors teaching in a traditional venue have certainly been learners in such an environment, requiring on-line instructors to take an on-line course makes a great deal of intuitive sense. It is strongly suggested that instructors new to the on-line environment have a more seasoned on-line faculty member serve as a mentor and/or the new faculty "shadow" a more seasoned faculty member. These, of course, are strategies that are helpful in traditional teaching/learning formats but may be essential in the on-line format.

Other suggestions to ensure faculty readiness are to provide technical and instructional support to faculty developing on-line courses. Additionally, it is recommended that on-line courses be competency driven.

Other Issues

A variety of issues emerged from the discussion that followed with the panelists. Several of the key issues are summarized below:

- **On-line Course Size:** Sixteen to 20 students is the optimum size for most courses, though size varies by discipline. Generally, if less than 10 students are enrolled in an on-line course, it is hard to get sufficient interaction between students and difficult to form adequately sized teams. If there are more than 20 students enrolled in such a course, the course is somewhat unmanageable. Optimum size for a research course is approximately 12 students.
- **Work Load Issues:** On-line education may bring about specific work load issues on a unionized campus. It may, therefore, be wise to develop an institutional definition of on-line coursework and to take the workload associated with on-line courses to the negotiating table as a task separate from traditional course formats.
- **Student Learning Issues:** Student learning issues included that today's learners have an expectation of immediate feedback, must demonstrate competency based learning, may need to have course content delivered in

modules in an on-line format and will require traditional mentoring as part of the graduate education experience.

- Institutional Issues: Institutions need to be vigilant regarding continuing advances in technology, the cost of higher education and access to higher education.

Financing Graduate Education: the Perspective of a Research Extensive Public Institution; The University of Iowa

John C. Keller
Associate Provost for Graduate Education
and Dean, Graduate College
The University of Iowa
205 Gilmore Hall
Iowa City, IA 52240
john-keller@uiowa.edu

Abstract

The University of Iowa is categorized as a research extensive public institution that offers over 100 graduate programs and serves over 5,000 graduate students. Like its peer institutions, the University has had to grapple with many issues which have impacted the level of funding for its graduate programs. Dwindling state support for higher education, moderate tuition increases, fluctuations in external grant funding, the establishment of a graduate employee union, changes in institutional goals and priorities, and recommendations from the formal academic review of the Graduate College have forced the College and its graduate programs to make adjustments in the levels of support for its graduate students.

Overview of the University of Iowa Graduate College

The Graduate College at the University of Iowa has been a “free-standing” academic and administrative college since 1988. Prior to that time, the Graduate College was administratively linked with the Office of the Vice-President for Research and was led by a single individual, Duane C. Spriestersbach. Since 1988, the Graduate College has had independent leadership and in 1998, the title of Associate Provost for Graduate Education was added to the title of Dean of the Graduate College. In fall, 2005, the total enrollment of the Graduate College was 5,347, with 2,750 doctoral students and 2,239 master’s degree students. Three hundred fifty-eight students are classified as non-degree seeking students. These students are enrolled in over 100 graduate programs offered by 11 Colleges (www.grad.uiowa.edu), including the College of Law as well as the Graduate College itself. Although the jurist doctorate is offered and conferred by the College of Law, in any given year approximately 20-25% of the law students pursue dual degrees, most in association with programs offered through the Graduate College. The Graduate College serves a unique role compared to its peers in that the College is the administrative home to a number of graduate programs/departments with an interdisciplinary orientation, including the School

of Library and Information Science, Urban and Regional Planning, and graduate certificate programs in the Center for the Book and the Project on the Rhetoric of Inquiry. Each of these graduate programs has faculty and staff that are appointed directly by the Graduate College.

Financial Support for Graduate Students

At The University of Iowa, the emphasis for financial support for graduate students is focused on students pursuing terminal degrees, including master of fine arts and doctoral degrees. The focus of the support is largely in the form of graduate fellowships or assistantships. Graduate fellowships are funded either by the Graduate College (see below) or by resources available via individual colleges or programs. Graduate assistantships are available from the Graduate College and/or colleges and programs. Assistantships take the form of teaching, research and administrative assistantships.

- Fellowships: The Graduate College has a series of multiyear and term (1 year or less) fellowship programs. For the 2006-2007 academic year, the Graduate College supported almost 250 fellowships campus-wide. The multiyear fellowship programs are the Presidential Graduate Fellowship (PGF) and Deans Graduate Fellowship (DGF) programs. The recipients for both fellowships emanate from nominations submitted by graduate programs at the time of student application. Students in both fellowship programs receive a generous stipend and a health benefits package, as well as payment of full tuition and fees. The PGF program offers guaranteed support (assuming satisfactory academic progress) for five years. The Graduate College supports a first year and two final fellowship years, while the host department supports students for two years through teaching and/or research assistantships. The DGF program is designed to support students from under-represented populations in graduate education, including racial and gender-in-specific-field's populations. This fellowship supports students in both masters and doctoral programs for varying periods of time (2-3 years for masters) and 4 years for doctoral students. Program matches of support are sought for doctoral students in this category. Both fellowships have proved to be an effective means for recruitment of high quality students who pursue and attain their graduate degrees with times to degree equal to or better than their peers. The Graduate College also supports a variety of term fellowships. These consist of dissertation year fellowships in the social sciences and humanities (Ballard/Seashore fellowships), fellowships for students requiring international travel for the conduct of research (T. Anne Cleary fellowships), Iowa Arts and Performing Arts fellowships and a new program, summer fellowships, for those students in graduate programs which appoint students for the academic year (largely in the non-sciences). Each of these fellowships, in its own right, has been an extremely effective mechanism to support graduate students for a variety of special intents. Each year, the Graduate College receives numerous letters of thanks from recipients, alerting the Graduate College to the impact these fellowships have made on a student's degree progress and professional development. Looking to the future, the Graduate College hopes, through continued reallocation of its resources, to

develop a first-year fellowship program to attract high quality students to Iowa, prior to being appointed to departmental or collegiate teaching or research assistantships. Each fellowship program is highly competitive, requiring considerable time and effort for careful submission of applications by programs or students, and for timely review by Graduate College review committees. Over the past number of years, the Graduate College has observed and considered the changes recommended by various organizations, groups and agencies for supporting graduate students by linking funding decisions to outcome measures of graduate education, such as admission qualifications, retention and attrition, degree completion and placement of students upon graduation. It is clear that program leaders are making serious efforts to align programmatic goals with the Graduate College's goals to encourage recruitment of high quality students who are good "matches" to the program, provide a series of strong academic and professional development opportunities for students, and encourage timely and efficient completion of degrees.

- **Assistantships:** At The University of Iowa, graduate assistantships consist of teaching, research and administrative assistantships. Financial sources of support for these categories arise from department and collegiate resources, as well as from a multitude of grants and contracts to individual faculty members and programs. According to the University's human resources office, in fall 2005, there were approximately 2,880 graduate assistantships at the University; this is not the number of students funded, but rather true assistantships. A number of students are appointed as TAs and RAs at any given time. Of these assistantships, 1,692 positions were TAs appointed by individual colleges (largely the College of Liberal Arts and Sciences, but also other colleges that provide undergraduate instruction such as Engineering, Business and Education). The remaining 1,188 appointments were research and administrative assistantships; almost 700 of these GRAs were appointed from research and training grants and contracts, while about 500 were appointed from "general fund" resources. At the University of Iowa, "general fund" resources are derived from state appropriations, tuition revenues and indirect cost returns. Thus the bulk of the TA and RA appointments at Iowa come from the general fund pool. A number of assistantships and fellowships are supported from private donations and the University Foundation, but these appointments are more difficult to track, and we are not certain of the numbers of students supported from private funds.

The Impact of the Graduate Employee Union on Funding For Students

In 1996, the graduate students petitioned the State of Iowa Professional Employment Relations Board and were awarded the right to collective bargaining and the establishment of a graduate employee union. Thus, in 1997, the Campaign to Organize Graduate Students (COGS) was initiated and the first two-year contract was established (www.cogs.org/contract.htm). Starting July 1, 2006, the University and COGS will enter into the second year of our fifth contract. The AY 2006-7 will also be a year of negotiation and collective bargaining for the next two year contract for the period July 1, 2007-June 30,

2009. The members of the union are mostly, but not entirely TAs. Research and administrative assistantships, as they relate to a “service” component of the work, are also covered under this collective bargaining agreement. The University utilizes the agreements in the contract for establishing basic parameters for student stipends, tuition scholarships and health benefits, regardless of the source of funding and whether the student is eligible to be a union member or not.

Many issues have been settled over the time that the collective bargaining agreement has been in existence. The base position of the University throughout all the contract negotiations is that the members of COGS are students first, then employees. That is to say, no student can have an appointment (fellowship or assistantship) without first being a student in satisfactory academic standing. The basic parameters of financial support are stipend, tuition scholarships and benefits (see Table 1 for FY 07 figures). These are the “costs” of supporting graduate students on assistantships at Iowa. A complicated issue for us throughout the more than ten years of negotiations is the issue of payment of tuition. The State of Iowa Board of Regents (which provides oversight for the Regents institutions: The University of Iowa, Iowa State University, the University of Northern Iowa and two small specialty schools for the blind and deaf) has a standing policy that there are no waivers of tuition in the public institutions in Iowa. Tuition must be paid for all students, regardless of the source of funding. Thus the challenge at Iowa is to provide sufficient tuition scholarships to remain competitive with our peer institutions which is a real and expensive challenge, particularly in turbulent fiscal times. The current collective bargaining contract calls for support of tuition scholarships on a pro-rated basis per student credit hours of registration, with the maximum scholarship for 9 semester hours (full-time enrollment) set at \$1,487 per semester. For AY 06-07, the resident rate of tuition is \$2,983 for 9 s.h. or approximately 50% of the resident tuition assessment. All graduate students with 25% or greater appointments are entitled to resident tuition assessments.

A challenge during negotiations is the uncertainty concerning the future rates of tuition increases or the changing costs of health benefits. A complicating factor is trying to make gains on the fact that until several years ago, the University of Iowa had no tuition scholarship program. Thus to make substantial gains in each contract in order to meet the compensation levels at peer institutions has been a challenge. The contract establishes mandatory minimum levels for the stipend, tuition scholarship and benefits; if departments, programs or colleges have the available resources, they are free to supplement these compensation packages as appropriate. Not surprisingly, a number of programs, especially in the sciences are driven by the “market” and surpass the stipend and tuition scholarship levels established in the contract.

Fiscal Realities are Changing Graduate Education

There are a number of factors that are impacting graduate education from a

financial standpoint. First, as we all realize, there is a declining level of support for post-secondary education in general, and graduate education specifically, from state sources. This decline has been more rapid and noticeable in some states than others. In general, the public views graduate education as a private benefit to the student, rather than a benefit for the public that deserves adequate recognition and support. Second, the same public forces that have been decreasing institutional support are also asking for limited increases in tuition. These demands are typically linked to the HEPI increases and have been approximately 3-4% in recent years. Third, federal levels of support for graduate education and graduate students have moderated greatly from agencies such as the National Endowment for the Arts, the National Endowment for the Humanities and more recently the National Science Foundation and the National Institutes of Health.

What does this mean for providing support to graduate students and programs? For an institution like the University of Iowa, it means hard choices need to be made! With the realization that graduate college budgets are not growing, we are forced to engage with a series of intersecting questions. First, can we support the same number of programs that we always have? If we want to continue to provide competitive levels of support to our graduate students, funding must become more aligned with university priorities. In the future, we simply cannot support the same number of students at competitive compensation packages as we once did. Determinations of priorities for funding must be made with collegiate deans and university administrators after consideration of centrality and quality of programs.

Second, as funding for graduate education becomes even more constrained, we must consider the effects of these changes on the educational and research/scholarly mission of the institution. It is becoming clear that new models of assembling research laboratory personnel and providing high quality instruction are imperative. For example, as graduate student compensation packages approach, or in some instances exceed \$30,000/yr for a 50% appointment, one must question whether or not a blend of instructional and research staff that perhaps includes advanced level (honors?) undergraduates, post-doctoral scholars and different types of instructional staff, as well as graduate students, is a model of the future. The decline in the number of graduate students under such a model is, no doubt, disturbing to some; but it may be offset by gains that are not yet fully understood. For example, at Iowa, a number of programs are beginning to use this blended model and have begun to use advanced undergraduate students to assist with basic laboratory and discussion activities. Others are developing teaching post-doctoral positions, where candidates can focus on providing high quality instruction, while honing their teaching skills and developing their doctoral scholarship for publication. It is becoming clear that these types of approaches may have added benefits as well, by enhancing the professional development of students at each stage of the academic ladder. Under this model, one can envisage better retention of doctoral students and a higher degree of completion of doctoral students, perhaps with shorter, or at least more efficient times-to-degree.

Impact at Iowa

The Graduate College and our programs have been faced with a decline in funding for some time. Only recently has the situation become acute enough for doctoral programs to take notice and begin to implement the adjustments necessary to adapt to rapidly changing funding paradigms. In order to address, in part, these changes, the Graduate College has made the following decisions which result from recommendations made following the formal review of the College in 2003-2004.

The Graduate College is moving away from a mixed fellowship and campus-wide (to doctoral program) support model to a "student centric" model. Under the former campus-wide distribution program, doctoral programs received funds each year from the Graduate College to operate their programs. Few restrictions were put on the use of these funds with the exception that they be used to support students. Over the many years that this program existed, programs saw these annual funds as an entitlement, and it became very difficult for the Graduate College to adjust annual funding levels based on any sort of quality or outcome measure. Thus, following the collegiate review, the Graduate College decided to do away with the entitlement program over a four year period of time. AY 2006-07 will be the third year of this four-year plan. Funds made available from this reallocation plan have been put towards the various fellowships programs and a Strategic Initiative Fund. We have noted that over time, departments have begun to make substantial changes to their programs, to alter recruitment practices, enhance stipend and tuition scholarship levels, adjust curricular requirements and expectations, all of which is leading (we hope and expect) towards higher levels of doctoral completion and more appropriate time-to-degree. Redeployment of the funds to our fellowship programs has allowed us to make the programs more competitive with funding provided by our peers, and to offer new programs that impact the graduate population (e.g. summer and first year fellowships).

Additionally, the Strategic Initiative Fund that allows the Graduate College to reward departments that apply for projects addressing specific concerns with in their programs and which are correlated to University goals. For example, this past year, funds were used to support specific recruitment initiatives, especially those targeted for enhancing diversity or interdisciplinary activities, and those that helped students complete their degrees (mini-dissertation-year fellowships).

Most importantly, throughout this four year reallocation period, the Graduate College has articulated its goals of adjusting its funding priorities towards meeting the goals of the University of Iowa Strategic Plan 2005-2010, which includes providing support for priority programs (those deemed to be central to the University mission and of high quality), interdisciplinary graduate research and scholarship, and efforts to enhance the diversity of graduate populations.

Acknowledgements

I am grateful to Associate Deans Sandra Barkan, Minnetta Gardinier and Dale Wurster for their helpful suggestions, and to my assistant, Caroline Mast for her editorial comments. a competitive workforce.

the exceedingly valuable efforts of Associate Dean Robert Frank and Senior Assistant Dean Eleanor Buczala.

Table 1					
Basic Financial Provisions for FY 2007 COGS Contracts (Minimum Mandatory) for 50%					
	Contract	Stipend	Tuition/Fees	Benefits	Total
TA/RA	Academic Year	\$15,985	\$2,975	\$2,669	\$21,629
TA/RA	Fiscal Year	\$19,537	\$2,975	\$3,262	\$25,774
RA*	Fiscal Year	\$22,000 to \$25,000	\$6,758	\$3,674	\$32,432
*Typical annual biomedical, physical sciences compensation packages FY 2007 NIH postdoctoral position = ~\$36,000; UI lecturer = ~\$48,000					

Financial Support for Graduate Students: Who Pays?

Hilary Horn Ratner
Dean of the Graduate School
Wayne State University
4057 Administration Building
Detroit, Michigan 48202
hilary.ratner@wayne.edu

Abstract

Wayne State University is a national research university with an urban teaching and service mission. As a research university, Wayne State provides a research foundation to its undergraduate curriculum and provides strong graduate and professional programs, resulting in our current Carnegie classification as a university with very high research activity, like our sister institutions, the University of Michigan and Michigan State University. To recruit and retain high-quality graduate students, and achieve our mission to offer outstanding graduate and undergraduate programs, graduate student funding is a critical issue.

Financial Support for Graduate Students: Who Pays?

During Fall 2005, a total of 33,137 students were enrolled in the university's programs; 20,737 undergraduate and 12,400 graduate and professional students in 11 schools and colleges, making Wayne State the sixth largest graduate and professional school among all public universities in the country. The university offers 58 doctoral, 133 master's, and 39 professional, certificate, and specialist programs. In 2004 to 2005 5499 degrees were granted, 2712 of them graduate degrees. Over 85% of these were master's degrees (2355), with 186 doctoral degrees and 171 certificates comprising the rest. In 2005, total research and development expenditures equaled nearly \$225 million, which represents a 162% increase from 1993 to 2005. Based on these expenditures, NSF ranks Wayne State 43rd among public universities and 64th among all universities.

Following a decade of relatively flat enrollment, Wayne State has expanded substantially since 2000. University enrollments grew from 30,408 in Fall 2000, a 9.0% increase, led by a 14.6% growth in undergraduate students. This increase was propelled largely by an upsurge in the number of first-time freshmen, which grew by approximately 47% over the period. Graduate and professional enrollment increased 5.1% between 2000 and 2003, but then declined 4.2%

between 2003 and 2005, yielding only a modest increase of .7% between 2000 and 2005. Doctoral and professional enrollment, however, increased during this entire period, showing a 2% to 5% increase each year between 2000 and 2006, except one. In contrast, enrollments in professional master's programs declined, especially in business, education, and engineering.

Understanding the links among our urban mission, educational access for graduate and undergraduate students, and the transformation into a research university, along with changes in state appropriations for higher education and in the state's economy, are all critical for understanding graduate student funding issues. The history and mission of Wayne State University require that we provide access to a high-quality education for our local citizens that will prepare them for highly skilled technical and professional positions within southeast Michigan. Our emergence as a research university also requires that we provide cutting-edge training to the best students from across the nation and around the world. These two objectives have become aligned in response to the economic realities of the region: Given the necessary transition from a manufacturing to a knowledge-based economy within the state, high-quality education for first-generation, but older and working college students, that could once be provided without a strong research profile is less possible now, adding to our funding challenges.

Our strong commitment to our traditional mission is reflected in the fact that our undergraduate profile differs significantly from our peer research institutions because of our high percentage of part-time and in-state students. The new 2005 Carnegie Classification system identifies WSU as PT4, high part-time four-year institution. In contrast, both the University of Michigan Ann Arbor and Michigan State University are classified as FT4/MS/LT, full-time four-year, more selective, low transfer. This part-time undergraduate designation even contrasts with some of our peer urban research institutions (e.g., University of Pittsburgh, Temple University, University of Cincinnati, University of Illinois at Chicago, and University of Alabama at Birmingham). This contrast in Carnegie designation indicates that we focus on students that other research institutions are less likely to serve and that we provide quality research-based programs to students who might in our own and other states seek education at less comprehensive institutions.

This interpretation is bolstered by the results of the 2004 report by the Anderson Economic Group, "The Economic Benefits of Wayne State University." Wayne State is identified as having more students who, if the University were not in operation, would not attend other higher-education institutions of comparable quality than at most other large research institutions. In other words, if Wayne State University ceased to exist, more students than at our peer state universities would either be unable to receive a university education at all or would be unable to have access to education that would as effectively prepare them for the knowledge economy. The reason is that WSU students, who are more diverse than at any of the other Michigan public universities, would be less able to attend

another university than students displaced by the hypothetical closure of their schools because those students would have means to attend other institutions. Providing this research-based world-class education to otherwise under-served students requires graduate programs, research funds, and competitive funding for graduate students, a significant challenge in an era of reduced state support for higher education (e.g., Field, 2006) and a growing gap between public and private research institutions (e.g., Carnesale, 2006). In addition to challenges shared with many institutions, there are unique economic pressures in the state of Michigan and the city of Detroit. Michigan has been slow to recover from the latest economic downturn, losing another 24,000 jobs in 2005. In addition, this year, 2006, is expected to result in the sixth straight year of job losses. Despite recent declines in the unemployment rate at the beginning of 2006, unemployment in 2007 is projected to increase and peak at a rate of 7.6% (Detroit Free Press, 2005). This financial picture is particularly difficult given that Detroit has struggled economically for many years. The Intercity Hardship Index developed by the Nelson A. Rockefeller Institute of Government (Montiel, Nathan, & Wright, 2004), composed of 6 factors reflecting poverty, income, unemployment, education, dependency (i.e., percent of people under 18 and over 64), and crowded housing indicates that Detroit has ranked in the top 10 of American cities for three decades.

One consequence of all these factors is that the state contributes much less to the university's budget than it once did. Eight years ago, Lansing provided approximately two-thirds of Wayne State's general fund revenue. Today that figure is less than half. To respond to these state reductions, unit budgets within the University were cut from 2002 to 2005, and tuition was raised. Nevertheless, undergraduate tuition still ranks below the median at 8th among the 15 Michigan public universities maintaining the university's commitment to keep high quality education accessible and affordable.

What does this context mean for graduate student funding? A concern is that against a backdrop of reduced state funding and small overall increases in graduate enrollment, along with an emphasis on serving a large and diverse undergraduate body, the funding for graduate students will decline and compromise our graduate programs. These concerns arise because much of our student support is provided by the general fund through state appropriations and enrollment-driven tuition. (See Table 1.) Despite shifts in the university budgets, however, graduate assistantships, held primarily by doctoral students, have increased over the last five years, even those supported by the general fund. (See Table 2.) Still, the overall number of general-fund supported teaching assistantships at Wayne State University appears to be fewer than those at comparable universities. Data from the University of Delaware Study of Instructional Costs and Productivity for 2004-2005 show that the number of credit hours generated by teaching assistants per full-time equivalent faculty is less at Wayne State University than at other research institutions. In contrast, the number of credit hours generated by tenure track faculty is comparable to those at other research, doctoral, and comprehensive universities.

The amount of debt that doctoral students leave the university with, however, is considerably lower than at our peer research institutions. Data from the Survey of Earned Doctorates reveal that over 20% more of our students than at other research universities leave with no debt at all, and 3% to 9% more, depending on year, graduate with less than \$15,000 in loans. Part of the reason that students leave with less debt may be because the university's tuition is competitive due to the emphasis on educational access, despite the recent increases, and because even doctoral students may be employed outside the university during their course of study, again reflecting the university's mission to serve working adult students. Additional data from the Survey of Earned Doctorates on post-graduation plans reveal that 10% to 14% more Wayne State University students than at our peer doctoral research institutions continue their pre-doctoral employment after graduation, suggesting that they are employed while studying. We do not have data on how many students are actually employed outside the university while enrolled in their graduate program; however, when students apply for admission to graduate school they are asked to indicate whether they expect to be employed. In Fall 2005, 72.1% of master's students and 51.0% of doctoral students indicated that they planned on working outside the university while completing their programs.

Debt level may change, however, when looking at changes in financial aid awards over the last three years. In Table 3, funds awarded as loans, grants, (private) scholarships, and work-study through the Office of Scholarships and Financial Aid are shown for master's and doctoral students in 2002 and 2005. What is striking is that the amount distributed as loans increased substantially, whereas the amount in grants and work-study declined for both master's and doctoral students. Scholarship funding through this office remained relatively stable. And although loans increased for both doctoral and master's students, the increase was substantially greater for master's students. The number of tuition scholarships awarded to both master's and doctoral students through a program in the Graduate School, the Graduate-Professional Scholarship, also dropped in the last two years. The number of scholarship applications, however, increased. In 2004, 523 students applied and 277 awards were made. In 2005, 698 students applied, but only 260 awards were provided. The number of students who enrolled and used the award, however, actually increased in 2005 in comparison to 2004. In 2005, 205 students enrolled, whereas in 2006, this number was 195, suggesting greater interest in, and perhaps, need for the funding.

It is clear that funding issues are of considerable concern to graduate students. The Office of Marketing and Communications at Wayne State University conducted focus groups and interviews of potential and former WSU students to examine why students did or did not choose to enroll at the university. One group studied was composed of 262 former graduate and undergraduate students who were currently not enrolled at the university. Graduate and professional students represented 28% of this opt-out group. Twenty-three percent were master's

students, 3% were doctoral students, and 2% were professional students.

Among the opt-out group, only 33% of respondents were currently attending school somewhere else. Graduate students (18%), however, were less likely than undergraduates to have chosen a program elsewhere (38%). Thus, when graduate and professional students did not re-enroll at the university, they were more likely than undergraduates to not enroll anywhere. This may account for why graduate students reported plans to return the next semester at a significantly higher rate (69%) than undergraduate students (55%). Money or financial concerns were the most frequent reasons given for withdrawing from the university among the opt-out subgroup (33%). Former undergraduates, however, identified money or financial concerns (39%) more often than graduate students (15%) as a primary reason for withdrawal. Personal or family issues were the top concerns for graduate students (27%). Many students cited child care or care of other family members as a reason for not returning, which may have indirectly reflected financial concerns. Although financial issues were cited less often by graduate than undergraduate students, money was still the second most frequent reason given for not re-enrolling.

In summary, there is evidence that enrollment patterns are linked to funding patterns. Doctoral enrollment increased over the last five years and institutional support for doctoral students also increased; master's enrollment decreased, and support decreased. This pattern also likely reflects an institutional commitment to invest in doctoral students and protect the research productivity and reputation of the university. Indeed, the university's provost introduced a Doctoral Enhancement Program two years ago that has provided strategically directed base-budget funding to strengthen 10 different programs.

Still, enrollment and funding may be linked together, although it is unclear what the relation may be: Enrollment may have increased because student support increased or support may have increased because enrollment increased. The second relation is possible, and more troubling, because a higher percentage of many public university budgets, including that of Wayne State University, is now dependent upon tuition for revenue. If this is the direction of the relation, student funding may become more unpredictable and more vulnerable to market conditions, especially for those urban universities that serve students from a more concentrated geographical area.

Consequently, students may need to shoulder more of the costs themselves, leading to greater volatility in enrollment, especially for master's students, further complicating the economic situation for universities. Indeed, although loans increased for both master's and doctoral students, the amount of increase was considerably greater for the master's students, suggesting that for them there is an increasing reliance on personal resources to fund their education, especially when employers buffeted by current economic conditions may not be able to provide tuition assistance. Again, this may be especially likely at an urban university that serves working adults, who reported in the marketing

study that family and financial concerns were most likely to keep them from re-enrolling. The irony is that the factors that draw working students to the university may be the same factors that challenge their success by keeping them out of school. Additional attention to student funding issues will be critical to ensure that graduate programs stay strong and students have access to the high-quality education they deserve.

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Table 1	
Typical Types of Graduate Funding at Wayne State University and the Source of Funding	
Funding Type*	Funding Source*
Scholarships, Fellowships, Teaching Assistantships	State Appropriations, Enrollment (Tuition)
Research Assistantships	Government, Industry, Foundations
Tuition Assistance	Industry (Employers)
Financial Aid	Federal Government
Personal Funds	Student

Table 2		
Number of Graduate Assistantships		
Source	Number	Number
General Fund	606	662

Non General Fund	274	333
Total	880	995

Table 3				
Financial Aid Awarded				
	Fall 2002	Fall 2005		
	Master's	Doctoral	Master's	Doctoral
Students	1879	272	2557	419
Loans	\$7,425,687	\$940,732	\$16,883,476	\$1,588,936
Grants	\$85,100	\$9,000	\$54,257	\$4,000
Scholarships	\$3,600	\$300	\$3,575	\$450
Work Study	\$93,185	\$5,000	\$8,000	\$0

Financing Graduate Education

Robert E. Thach
Dean of the Graduate School of Arts and Sciences
Washington University
153 North Brookings Hall
St. Louis, Missouri 63130-4899
thach@wustl.edu

One of our most important financial innovations has been referred to as the "Graduate Student Support-to-Degree Initiative." This idea was stimulated by a group of unhappy graduate students who were organizing a TA union. At Washington University, this problem was peculiar to Humanities and Social Sciences. Like almost every other university in the country, we had very high attrition rates in these areas. And the time required for degree completion was excessively long. A much cited study at a California university found median times for Ph.D. completion in Humanities of 12-14 years! And the proportion of entering students that eventually completed in Humanities at another large public university was less than 10%.

In sharp contrast, our results in the Physical & Biological Sciences were considerably better, and this was true both at Washington University and elsewhere. However, it was not obvious why there should be these wide disparities among the various disciplines; nevertheless, some observers were beginning to feel that it was mainly due to the different ways in which graduate students were supported in the different disciplines. For example, in the Physical & Biological Sciences good students were routinely supported as Research Assistants, their stipends being supplied by the advisor's Research Grants. In this respect they were viewed as similar to other full-time employees. Therefore, it seemed natural to support a student all the way to degree completion, and sometimes even beyond (as a post-doctoral student) the same way a full-time employee would be supported.

In contrast, no such tradition existed in Humanities or Social Sciences, primarily because Research grants were rare or non-existent. Instead, graduate students in these disciplines tended to find support as Teaching Assistants, and these were viewed as part-time, occasional jobs. And the tradition was that Teaching Assistantships were available to students only for the first few years of graduate study, until they could find more permanent positions doing something else. So in the Humanities and Social Sciences, the typical fifth year graduate student might be well into his or her Dissertation research, only to be suddenly faced with the prospect of having to find a job outside the university to pay the rent and put food on the table. And this was often a real shock. Many students never recovered from this sudden interruption in their highly focused study routines,

and were never able to get back on track. Thus many eventually drifted away from academe without finishing their degrees.

As I have suggested, these facts were just beginning to be understood twelve years ago, and Washington University was one of the first to adopt a radically new approach to supporting students in the Humanities and Social Sciences: the so-called "Graduate Student Support-to-Degree Initiative." Our approach was quite simple in concept: we radically reduced the admission of new students entering each of 21 graduate programs in the Humanities and Social Sciences, so that over time the total number of students would decline, to eventually become equal to number of Teaching Assistantships available. This has led to a gradual but substantial decline in the numbers of graduate students in the Humanities and Social Sciences.

This stood in striking contrast to programs in Biological Sciences, where NIH was ramping up grant support; therefore, these disciplines could afford to increase student numbers while still offering full support.

It is important to emphasize that we did not reduce the number of Teaching Assistantships available during this period. That number has actually risen slightly over the years, to keep pace with the slight rise in undergraduate population. We also did a number of other things to make graduate students lives more productive and less stressful. Examples include:

- Providing a heavily subsidized Health Insurance plan. Initially a student paid only \$25 per year, which represented about 11% of the total cost (\$220), the balance of which was paid for by a one year stipend freeze.
- Providing a Summer Web Workshop that taught computer and internet skills. In 5 intensive day-long sessions, graduate students were taught the basics of web site design, and helped to design web sites that would supplement actual courses that they or their professors taught.
- Providing a Summer Fellowship Program to enable students to concentrate on their studies 12 months out of the year. This was another attempt to put Humanities and Social Science students on the same footing as students in the Physical or Biological Sciences, who routinely spend their summers doing research in the laboratory.

The result of all these efforts has been pretty dramatic. Perhaps most striking has been the reduction in the median time-to-degree. In the Humanities time-to-degree fell from 9.8 years to 6.9 years. In the Social Sciences time-to-degree fell from 8.0 years to 6.5 years.

Equally gratifying has been an increase in the degree completion rate. In the Humanities, the completion rate went from 34% to 68%, the same as in the sciences. In fact, the completion rates in all program areas are now approximately the same.

There are several other Universities around the country that report results similar

to these. Not surprisingly, they are the ones that have adopted a Support-to-Degree model.

It is interesting to note that we have also seen improvements in Science areas, not just in Humanities. This improvement is due to a variety of factors, primarily to other incentives we have created internally. If I were forced to pick three from a long list of initiatives I would choose the following examples:

- Founding of Graduate Student Senate and a Graduate and Professional Students Council. This led to a subsequent emphasis on listening to graduate students' concerns, and then to creation of departmental and intra-disciplinary peer-mentoring networks. These associations connect graduate students to Graduate School staff, and to each other.
- Developing an Annual Review of Graduate Programs. Every June the Graduate Dean meets with Department faculty leaders to review progress. This sends a strong signal that every program's performance is being scrutinized and evaluated. This has stimulated internal evaluations within each graduate program.
- Initiating an Outstanding Faculty Mentor Award program. These awards are granted annually by graduate students to five faculty. The faculty are generally very desirous of receiving these awards, as they want to be seen as good graduate advisors. These awards have been very effective in emphasizing what is expected of a Research Advisor.

These are only a few examples. As every Graduate Dean knows, the job is never-ending. For example, we are now working on day care for children of graduate students, and a prescription drug plan. These will take time, but I am confident they will be achieved.

Bridging Student Affairs and Academic Affairs

Nora Few
Assistant Dean

Rebecca Bryant
Director of Graduate College Career Services

Graduate College
University of Illinois at Urbana-Champaign
801 S. Wright St
Champaign, IL 61801
njfew@uiuc.edu; rabryant@uiuc.edu

Abstract

Dr. Few and Dr. Bryant led an interactive discussion about the challenges of bridging student affairs and graduate academic affairs, specifically at the University of Illinois. They encouraged audience members to serve as advocates for graduate students, to serve on student affairs and campus committees in order to provide graduate representation, and to build relationships across campus. Many specific examples of positive relationship building with student affairs units like counseling centers, international student affairs, and emergency dean, were discussed. Occasionally, relationship building won't work and an example of how to create the services graduate students need was also provided.

The Landscape

While recently facilitating a career development workshop at another AAU institution, Dr. Bryant was surprised to hear a doctoral student articulate; "Student Affairs here does nothing for graduate students. Our needs are not addressed. It's like we're invisible."

We can identify at least three problems commonly observed in student affairs programs at Illinois and elsewhere:

1. The false assumption that graduate students are like undergraduates and need the same services.
2. Programs and services that don't fit the needs of the graduate student community (the result of #1). Graduate students feel unwelcome at events intended primarily for undergraduates.
3. The perception among some student affairs professionals that graduate

students are not entitled to services because they are not fee-paying (because of the preponderance of fee waivers for graduate students who have assistantships and fellowships).

The principal student affairs organizations, NASPA and ACPA, have traditionally focused exclusively on undergraduate education, with few resources dedicated to graduate students. Just last March (2005), ACPA established a Commission for Graduate and Professional Student Services.

Reaching Out – Successful Collaborations

There are numerous examples of successful collaborations between the Graduate College and student affairs units at the University of Illinois at Urbana-Champaign. We all have limited resources. We cannot be experts in every area. For these reasons and others, collaborations have been our preference when they are possible. We would like to highlight three collaborations with different characteristics.

- **Counseling Center.** The Graduate College at the University of Illinois at Urbana-Champaign has a long history of strong collaboration with the Counseling Center. The foundation of this collaboration is both formal and informal. Examples of formal collaboration include committee work, liaison designation, and shared workshops. Nora Few is a member of the Counseling Center Advisory Committee, which meets monthly to discuss relevant issues with the Director of the Counseling Center. The meeting frequently provides an opportunity to draw attention to the specific needs of graduate students and to assist in making programs more relevant for graduate students as well as to make them feel welcome at the Center. The Advisory Committee recently had the opportunity to review the Counseling Center portion of the university-wide Strategic Plan, and this was again an opportunity to point out that graduate students were barely mentioned in the document. The Counseling Center has a designated liaison to the Graduate College who participates on many Graduate College committees, has strong relationships with many of the Graduate College staff, periodically (with appropriate permission) works closely with Dean Few on a specific student case, and regularly leads or participates in Graduate College workshops. The current liaison, Dr. Greg Lambeth, developed a Dissertation Writing workshop specifically for graduate students that he has been presenting and refining for a decade. This workshop focuses on some of the difficulties typically encountered by doctoral students writing the dissertation and proposes organizational and time management strategies to solve these problems. Dr. Lambeth's years of experience as a clinical counselor and workshop facilitator made him a natural speaker at the Graduate College's first workshop for faculty on graduate student mentoring in January 2006. In an effort to expand and better tailor career development offerings for international students (who comprise a significant portion of workshop attendees at Illinois), Dr. Bryant has been collaborating with personnel from both the Counseling Center and International Student Affairs. Last spring, they co-sponsored a new pilot workshop for international students

on adjusting to the Western university system. The personal relationships that have developed between the staff of the Graduate College and the Counseling Center are what make our collaboration so strong and so positive. We trust each other, understand each other's point of view, and see our work together as being mutually beneficial for us as well as enhancing our service to the students. Our collaboration is very successful now, but we know that there will be more work to do in the future as staff change and new relationships become necessary. Our next example addresses what happens when relationships we have relied on are no longer in place.

- International Student and Scholar Services (ISSS). International Student and Scholar Services (formerly the Office of International Student Affairs) on the Illinois campus has undergone considerable transformation in the last few years including a change in the administrative unit they report to and a significant staff turnover. Perhaps most noteworthy, the two senior administrators who had closest relationship with the Graduate College are no longer with International Student and Scholar Services. As a result of these changes, we had to re-evaluate how to make our relationship work. The first step was to identify an ISSS staff member to act as liaison with the Graduate College. We were very lucky in that ISSS had hired an academic professional who was previously a temporary extra-help employee for the Graduate College. The fact that our relationship with this staff person was already established contributed to prompt implementation of measures to strengthen the relationship between ISSS and the Graduate College. Our new liaison identified education of new ISSS staff as an important need. Some of the new staff had personal experience as a graduate student, but there was limited familiarity with doctoral education. Many were unaware of details regarding graduate education in the United States, having completed their higher education in other countries. The liaison arranged for three Graduate College deans, including Dr. Few and our facilitator Dr. Deborah Richie, to meet with the new ISSS staff as a group. The deans provided an overview of the services provided by the Graduate College. Dr. Few then had two further meetings with the staff to provide more detail about graduate education and to establish a better understanding of what issues should be discussed with the Graduate College. This has led to more efficient and accurate handling of international graduate student problems.

- Special Situations Committee. The Special Situations Committee is a campus-wide committee that is indeed special, and for this reason we have chosen it as our final example of a successful collaboration. This committee is comprised of members representing The Office of the Dean of Students, University Housing, the Counseling Center, the Office of Student Conflict Resolution, McKinley Health Center (student health), Campus Police, the Graduate College, the Office of the Provost, and the Office of University Counsel. The committee meets once a month for two hours. The purpose of the group is to share "special situations" that may impact several areas on campus. Sometimes the major goal is to alert other areas that someone is already working on a situation. At other times, several areas may already be involved, and one area is designated as the point of contact. In many cases the expertise of the group is called upon to refine the approach to a difficult situation. Occasionally an urgent

situation will require immediate consultation and/or will need input from additional people. In such cases a staffing can be called and committee members and others are invited as appropriate. As an example, consider a situation where one graduate student is stalking another graduate student. A staffing for such a case might include Special Situations Committee members from The Office of the Dean of Students, the Counseling Center, the Office of Student Conflict Resolution, Campus Police, the Graduate College, and the Office of University Counsel in addition to the Directors of Graduate Study and/or the Department Heads from the students' departments. If one of the students is international, a representative from International Student and Scholar Services would also be invited. A discussion of how to proceed in such a situation is never easy, but the understanding and trust that has been built among committee members over time greatly facilitates resolution.

When a Relationship Couldn't Work

Relationship building may not always work, and sometimes you may have to "go it alone." Here at Illinois, the Graduate College had difficulty gaining student affairs support for graduate student career advising services. The campus wide career center, funded by student fees, served all students, but had no specialized services for graduate students; the entirety of its program focused on undergraduate students. When we couldn't gain student affairs cooperation, we established our own career services for graduate students within the Graduate College.

The Graduate College Career Services Office (GCCSO) assists University of Illinois graduate students with decision making and planning for career paths both within and beyond the academy. It is a centralized resource for graduate students from all disciplines, with services focused especially on the needs of graduate students in the humanities, the social sciences, the fine arts, and other areas in which students are not served by dedicated, discipline-based career services offices. Since 2003, GCCSO has developed extensive online resources, a comprehensive workshop series, and provides individualized advising for students.

What Can Graduate Deans Do?

We must be advocates for graduate students; no one knows their needs as well as we do. We must build relationships all across campus. If we see a committee that does not have graduate representation, and should have, we should step forward and volunteer to serve on the committee. Our experience at UIUC has been that collaborative endeavors are most effective in bridging student affairs and academic affairs. This is not always possible, however, and when collaboration won't work, don't be afraid to "go it alone". In these ways, we will make our graduate students, and their needs, visible.

The Graduate School: Bridging Student Affairs and Academic Affairs

Yevonne R. Smith, Ph.D.
Associate Dean of the Graduate School
Office for Student Affairs
Michigan State University
116 Linton Hall
East Lansing, MI 48824
smithy@msu.edu

Abstract

Michigan State University's Graduate School serves as the leader and principal advocate on campus in bridging Student Affairs and Academic Affairs for graduate students since many university services are primarily planned and targeted for undergraduates. The structure of the MSU Graduate School specifically focuses attention on the needs of graduate students. Its advocacy role is to promote connections between university services for all students and unique services required for graduate students to help them be successful. Programs and services in the Graduate School are organized to serve the needs of prospective, beginning, and continuing graduate students in order to help them achieve their ultimate goals of graduation and satisfying professional careers. Recruitment, retention programs, academic, research, and professional career workshops, fellowship programs, and communication structures sponsored through the Graduate School Student Affairs, Academic Affairs, and Dean's Offices are highlighted to help bridge the student affairs and academic affairs needs of graduate students.

Michigan State University's Graduate School: Bridging Student Affairs and Academic Affairs for Graduate Students

Michigan State University's Graduate School serves as the leader and principal advocate on campus in bridging Student Affairs and Academic Affairs for graduate students. The structure of the Graduate School with three main offices helps facilitate important working relationships within the Graduate School unit and throughout the university. For example, there are specific functions and roles among the Offices of the Dean, Associate Dean for Student Affairs and Associate Dean for Academic Affairs and some overlap and back-up between these offices to meet the recruitment, retention, academic, research, professional development and graduation needs of MSU graduate students. (See Figure 1 Michigan State University Graduate School.)

Figure 1
Michigan State University Graduate School



Bridging Student Affairs & Academic Affairs

Many graduate schools find that there is a need to provide unique and specialized services to graduate students to insure their success because graduate students' needs are different, and often not met through regular university services, which tend to focus on the needs of undergraduate students. Needs of graduate students have been delineated in three prescribed time periods. These include prospective graduate student needs, beginning graduate student needs, and continuing graduate student needs.

Programs are discussed that meet the needs of graduate students at various stages of involvement with graduate education. (See Figure 2.)

Figure 2
Categorical Graduate Student Needs not met by
Other University Structures

- Prospective Graduate Student Needs
- Beginning Graduate Student Needs
- Continuing Graduate Student needs

Prospective graduate student needs tend to be informational regarding a variety of programs and services that are available within graduate education. The students need several layers of information about various

graduate school programs on campus, masters and Ph.D. degree emphasis areas within academic disciplines, and faculty profiles to determine which departmental faculty they would like to work with based on shared research interests. A major concern of prospective students is the availability of graduate school fellowships, graduate assistantships, and other funding information, provided through brochures, graduate school personnel, the MSU Graduate School website (<http://grad.msu.edu>) and departmental faculty resources, not available through the main undergraduate student affairs office. In addition to the preceding information, the MSU Graduate School Office for Student Affairs provides recruitment programs such as the Faculty Travel-Cost Share Program that supports faculty in the recruitment of outstanding students for their own college and departmental programs through support for travel and attendance at graduate school recruitment fairs, professional conferences, diversity conferences and at other targeted academic university feeder programs. An Enhance Your Future (EYF) mini college conference structure for all graduate colleges provides funding for a free campus visitation, laboratory and campus tours for diverse prospective graduate students who have applied to university departments and are seriously being considered for admission. Colleges plan their own recruitment conference with matching funds provided through the Graduate School Office for Student Affairs, and they are expected to provide matching funds to support the conference. Students who are invited to attend will usually have interviews with departmental faculty and meetings with current graduate students and administrators. The Graduate School Associate Dean for Student Affairs will usually attend the different college conference programs when invited and speak with students about graduate school opportunities and funding, as well as answer prospective students' questions. All of this is in an effort to help prospective students, departments, and colleges make just the right fit for prospective graduate students. Students who have socio-economic issues and needs are provided with free application programs to help pay their application fees.

Also, the Associate Dean for Student Affairs serves as a liaison to the McNair/SROP undergraduate program for first generation educated, lower socio-economic status and under-represented undergraduate students. This program increases future opportunities for diverse undergraduates to attend graduate school through enhanced academic and graduate education preparation such as research training, faculty mentoring on collaborative research projects, Graduate Record Examination (GRE) preparation sessions, and research classes. McNair/SROP scholars are expected to work hard, meet weekly with faculty mentors to prepare a culminating research project presentation and a typed-written research paper. Students are provided a monthly stipend and several Graduate School preparation workshops. All scholars attend a CIC-Summer Research Conference in July and present an updated research progress report. The Graduate School Office for Student Affairs assists in funding travel for students to the CIC Conference. The Associate Dean typically participates in a Graduate School

Recruitment Fair at the CIC- SROP Conference, serves as a research session facilitator, and provides a fellowship for those former McNair/ SROP Scholars who eventually apply and are admitted to Michigan State University Graduate School programs.

Other prospective masters and Ph.D. graduate students may be recruited through Graduate School Fairs attended by the Graduate School Dean, Associate Deans and Deans' staff, but mostly they are recruited through Graduate School sponsored departmental Faculty Travel Cost-Share efforts, the Enhance Your Future Conference Programs, informational brochures, departmental faculty, Graduate Program Directors, and Graduate Secretaries' communications, and the Graduate School website (<http://grad.msu.edu>). Summer Recruitment Fellowships supported by the Graduate School's Student Affairs Office are offered to prospective graduate students who are admitted and then nominated by their departments to begin their graduate school education early during the summer session. (See Figure 3.)

Figure 3
Prospective Graduate Student Needs

- Recruitment of Diverse Graduate Students (Faculty Travel Cost-Share Program)
- Campus Visitation Programs (EYF)
- Applications (Free App Programs)
- Internet Information (Graduate School Website)
- Recruitment, Education & Mentoring Undergraduate Students (McNair/ SROP)
- Funding Opportunities Information (Graduate School Brochures & Programs)
- Admission to Departmental Programs (Before General Admission to the University)

Beginning graduate students are provided a Graduate School Orientation Welcome Program, Graduate Student Fair and Ice Cream Social in August where students are greeted by the Graduate School Dean, the Graduate School Associate Deans, Council of Graduate Students and multi-ethnic graduate student organizations, Career Planning and Placement Services, Financial Aid, Women's Resource Center, Family Resources for Students with Children, Student Health Services, etc. Student Health Insurance is also a critical need for new graduate students as well as Graduate School funded University Distinguished and Enrichment fellowships, Academic Achievement Assistantships, Summer Recruitment Fellowships and departmental teaching and research assistantships. The Graduate School coordinates to make sure that each of these funding opportunities provides the student with nine (9) credits free each semester, up to 3 credits during the summer, and health insurance. Graduate student stipends are based on a formula that includes degrees possessed and levels of work experiences

which are stipulated by the Graduate School Dean to maintain consistency across programs.

The University Distinguished and University Enrichment Fellowships are highly competitive five- year fellowships for Ph.D. students that are administered through the Graduate School Office for Academic Affairs with matching funds provided by colleges and departments. University fellowships have been upgraded from four years to five (5) years based upon research data that indicated that the majority of Ph.D. candidates do not finish degrees in four (4) years. Departments and colleges nominate their best Ph.D. students based on established criteria such as academic assessment, leadership experiences, research experiences and potential, and ability to overcome personal and social obstacles. Typically, the Graduate School provides approximately 40 University fellowships that are awarded in the first and fourth or fifth years and the departments provide an assistantship to these continuing students in years two and three with some match of funds in the fifth year if needed. Other continuing graduate students may apply for and be nominated to receive Summer Retention Fellowships in order to be able to continue their classes, research and academic progress during the summer school sessions. In all cases the Graduate School has oversight with these graduate school funding structures and matches its resources with colleges and departments to provide more consistent long term funding opportunities for graduate students. The colleges will be offered Graduate Office Fellowship funds provided by the Graduate Dean who helps colleges to provide other funding for some students in the form of fellowships and graduate assistantships.

In addition, the Graduate School collaborates, communicates, and serves as a liaison to other units on campus such as Human Resources to provide appropriate and cost effective Student Health Insurance for graduate students, the Office of Fees and Scholarships, and the Teaching Assistant Program which provides mentoring assistance for beginning and continuing graduate students in learning to teach more effectively through gaining additional knowledge bases, feedback on teaching, applied experiences in teaching, observations, and teaching consultations. (See fig. 4 Beginning Graduate Student Needs.)

Figure 4

Figure 4
Beginning Graduate Student Needs

- New Graduate Student Orientation Program and Graduate Student Fair
- Graduate School Sponsored Fellowships
 - oUniversity Fellowships (UDF & UEF)
 - oSummer Recruitment Fellowships
 - oGraduate Assistantships (AAGA)
 - oStudent Health Insurance
 - oTeaching Assistants Program

Continuing graduate students also have many needs that must be met if they are to succeed. Many of these can be classified as needs for Retention, Academics, Social Support, Research, Professional Development, and Graduation. In addition students may often have individual, personal-social or cultural isolation, disconnectedness needs, and an inability to be fully integrated within their academic units. The Graduate School Academic Affairs and Student Affairs Offices are involved in supplying retention services that involve academic, social, financial, professional development, thesis, dissertation and graduation support services. Other units in the university such as the Career Planning and Placement Services and the Counseling Centers will interact and coordinate services for graduate students with the Graduate School's support, and also provide counseling services and professional development workshops for graduate students. For example, the Graduate School may be called upon to assist a graduate student who is in the counseling center with a personal-social support or academic need. The counselor may feel he has gone as far as he/she can go and needs assistance from the Graduate School. So with the student's permission, often consultations for a given student may entail services by both the Graduate School and the Counseling Center or by Career Planning and Placement Services and the Graduate School Planning, Resilience, Engagement, Professionalism (PREP) workshops. Information on the PREP workshops can be found on the Graduate School website at <http://grad.msu.edu>. Continuing students may have conflicts within their departments or emergency financial needs, and at the students' request, the Graduate School will provide interventions through the Emergency/ Discretionary Fellowship, Conflict Resolution Workshops and other PREP professional development workshops to help retain continuing graduate students. In many cases, we have rolling application dates to apply for funding through the Emergency/Discretionary Fellowship and Research Travel awards to better assist in the retention of graduate students to help address immediate personal, academic and research needs that can interfere with timely progress toward the degree. Other programs such as the Research Enhancement, King-Chavez-Parks (KCP) Future Faculty, Summer Retention, or Dissertation Completion Fellowships have strict application dates and deadlines and are competitive.

The MSU Graduate School's innovative PREP Program uses a variety of workshop delivery systems to meet continuing graduate students' needs at early, middle and late stages in their graduate academic careers. PREP workshops are sponsored by the Graduate School, Academic Affairs, and Dean's Offices, with sessions conducted by the Graduate School Dean, Associate Dean for Academic Affairs, several Graduate School Faculty in Residence and other on- and off-campus experts. Workshops are for masters' level and Ph.D. level continuing students interested in learning more about research training, research integrity, conflict resolution, negotiating the Ph.D. and academic and professional career development. Following are some PREP workshop titles:

- Responsible Conduct in Research,
- Theses and Dissertation Writing,
- Navigating the Ph.D.,
- Conflict Resolution,
- Job searches,
- Career Selection and Professional Development
- Teaching Assistantship Program
- Certification in College Teaching

PREP Professional Development workshops are geared to continuing graduate students seeking academic and non-academic career positions. (See fig. 5, Continuing Graduate Student Needs.)

Figure 5
Continuing Graduate Student Needs

Retention, Academic, Research & Professional Development

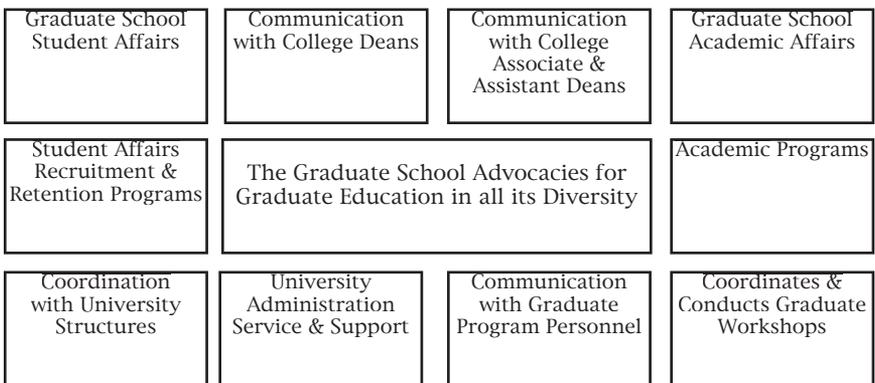
- Personal-Social-Academic Counseling & Consulting
- Emergency/Discretionary Funding
- Summer Retention Fellowships
- Mentoring Programs
- Research & Professional Conference Travel Funding
- Dissertation Completion Fellowships
- PREP Programs-Workshops
 - o Early Stage
 - ◊ Job Search
 - ◊ Navigating the Ph. D.
 - ◊ Career Selection & Professional Development
 - ◊ Teaching Assistant Program
 - ◊ Responsible Conduct of Research
 - o Mid Stage
 - ◊ Ph. D. Job Search Series
 - ◊ Dissertation Writing Workshops
 - ◊ Conflict Resolution Workshops
 - ◊ Career/ Professional Development
 - ◊ TA Program

- o
 - ◇ Responsible Conduct of Research
 - ◇ Late Stage
 - ◇ Dissertation Formatting
 - ◇ Ph. D. Job Search/ Interviewing
 - ◇ Conflict Resolution
 - ◇ Career Selection & Professional Development
 - ◇ Certification in College Teaching

How does the Graduate School Bridge Student Affairs and Academic Affairs for Graduate Education and Graduate Students?

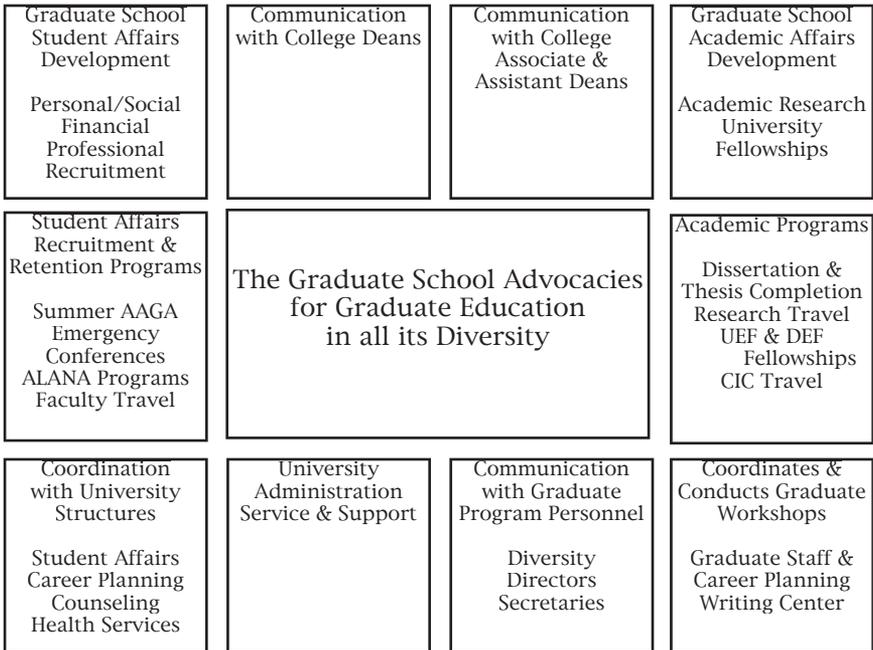
The Graduate School utilizes all of its resources within the graduate school and throughout the university and advocates, leads, and plans for graduate education through a variety of social and structural processes such as communication, economic capital accumulation and distribution, collaborations and power relations with colleges and departments. We maintain ongoing social interactions with central administration, colleges, departments and other university structures. We utilize Graduate School structures to work collaboratively with other student affairs, academic affairs, human resource and program units. The Dean of the Graduate School is the point person and she provides the visionary leadership and support for the Graduate School Offices for Student Affairs and Academic Affairs which also utilize these social processes and structures. Thus, it is through communication, timely responses, financial support, service and positive interactions with the University President and Vice Presidents, the Deans' Group, the Associate/Assistant Deans' Group, Diversity Directors, Graduate Program Directors, Graduate Secretaries in each department, Department Chairs and Faculty that bridging academic affairs and student affairs is achieved. (See Figure 6)

Figure 6
The MSU Graduate School Uses Social & Structural Processes to Bridge Student Affairs & Academic Affairs



By providing university service on committees, serving in liaison relationships with the offices involved in Student Affairs and Academic Affairs operations within the university and through communication and collaborations, the Graduate School takes the leadership role in advocating for graduate education in all of its diversity. It is by demonstrating competent leadership influence and helpfulness to colleges, departmental units, university administrators, and graduate students and by serving on various university level committees in advisory capacities that successful liaisons are established . (See Figure 7.)

Figure 7
The MSU Graduate School Uses Leadership to Bridge Student Affairs & Academic Affairs



But most of all, bridging academic affairs and student affairs is achieved through serving the needs of graduate students and graduate education in all of its diversity. It is also achieved by having the necessary resources to provide for the recruitment, retention, academic, financial, social support, research, graduation, and professional development career needs of diverse graduate students not traditionally served by other university structures. Thus, the Michigan State University Graduate School leads and coordinates programs and provides services to the university and graduate students. It uses the following structures to achieve its goals:

- Social Processes: Social processes include regular

communication, collaborations, and regularly scheduled meetings among the deans, associate deans, graduate program directors, chairs, and graduate secretaries. Social processes also include receptions and liaison relationships with the University President and Vice Presidents, Deans, McNair/SROP, Council of Graduate Students and other graduate student organizations.

- Graduate School Structures: Graduate School Structures include New Student Orientations, Graduate Fairs, Faculty Travel Cost-Share Program, University Distinguished and Enrichment Fellowships, and Dissertation Completion Events. Additional programs include Emergency/ Discretionary Programs, Future Faculty and Summer Support Fellowships, Academic Achievement Graduate Assistantships, EYF College Recruitment Conferences, GOF Funds, and PREP Workshops to bridge Student Affairs and Academic Affairs in order to meet the needs of prospective, beginning, and continuing graduate students.

Overview of the Workshops

Workshop 1: Graduate Student Health Benefits

Organizer: John Mayfield, Iowa State University
Moderator: Carolyn S. Payne, Iowa State University

Students completing graduate school face three financial questions. Will they have enough money to live? Will they be able to pay for tuition and fees? And, how much of their health costs will be covered? Health benefits vary widely among graduate schools, and are the least obvious of the costs of graduate education. This workshop presented the results of a recent survey of MAGS institutions and discussed issues facing all graduate administrators.

Workshop 2: Assessment and Review of Master's Programs

Organizer: Mary E. Beadle, John Carroll University
Panelists: Michael Carter, North Carolina State University
Patrick Melia, Eastern Michigan University
Mary E. Beadle, John Carroll University

The importance of assessment for accreditation and planning is a focus of much institutional energy. The components of a successful graduate program review will be presented. The revised CGS assessment review of Graduate Programs served as the guideline for this session.

Workshop 3: Making the Best Use of Graduate Data

Organizer: Richard Wheeler, University of Illinois at Urbana-Champaign
Panelist: Sally Mikel, University of Illinois at Urbana-Champaign

Data are crucial to understanding graduate programs. Degree completion, time to degree, distribution of student across programs, application and enrollment trends, and success of graduates, are only some of the dimensions of graduate education that require reliably collected, appropriately organized, and strategically analyzed data.

Workshop 4: Responsible Conduct of Research

Organizer: Gail Scukanec, Central Michigan University
Panelists: Bill Wiener, Marquette University
 Sherri Kirsch, Marquette University
 Gail Scukanec, Central Michigan University

This workshop focused on the core components of research ethics, knowledge that is essential for the campus community. Topics to be covered include data acquisition, management, sharing, and ownership;; mentor/trainee relationships; publication practices and responsible authorship.

Graduate Student Health Benefits

Carolyn S. Payne
Assistant Dean
Graduate College
Iowa State University
1137 Pearson Hall
Ames, IA 50011-2206
cspayne@iastate.edu

Abstract

Students engaged in graduate study face several financial issues. Will they have enough money for tuition and fees? Will there be enough money to live on? And, how much of their health insurance costs will be covered by their institution? Health benefits vary from institution to institution, and are possibly the least obvious of the costs of graduate education. This workshop presents some important issues for institutions to consider, many of them based on a recent survey of MAGS institutions conducted by the author.

Background

In February 2006, approximately 60 MAGS institutions were sent a link to a web survey that included several questions about health insurance. Institutions were asked if they had a group health insurance plan for graduate students, what groups of students received the benefit, what the costs to each group were, and who paid those benefits. Schools were also asked several demographic questions, including their size, public/private status, Carnegie classification, and graduate student enrollment.

Thirty-four MAGS institutions (approximately 75% public, 25% private) responded to the web survey. Seventy-six percent of those institutions had a group health insurance plan for graduate students. Of those who answered the question about who receives health insurance benefits (26 institutions), almost 85% indicated that graduate students on assistantship received the benefit, and 65% of institutions provided a group insurance plan to all graduate students. Although costs varied widely from institution to institution, the median annual cost for a student insurance group plan for a single student was approximately \$840 (whether a student was on assistantship or not).

The question about who paid the benefit for graduate students was fairly consistent across institutions. Of the institutions that answered the question,

over half of the institutions (or departments/programs) paid at least 50% of a graduate assistant's health insurance benefits and half of that group paid 100%. None of the institutions reported that they paid at least 50% or 100% of the benefit for graduate students not on assistantship. Additionally, fewer than 25% of the institutions paid at least 50% of the benefits for a graduate student on assistantship who had a partner, spouse and/or children (on this question the response rate was so low that it would be difficult to make generalizations across institutions though).

Group Participation Activity

After the results from the questionnaire were distributed and reviewed, the participants were divided into groups to discuss some of the issues about health insurance in more detail. The questions that guided the group discussions were:

- After tuition benefits (waivers, scholarships, etc.), what would you say are the top three benefits that you provide to graduate students at your institution? Make a list separately and then report out the top three across your group, if possible.

- On a scale of 1 – 5 (5, the highest), how would you rate your benefits package in attracting graduate students to your institution? If your rating is low, list some constraints or justifications in placing your rating so low. If it's high, also justify.

- What are the top three concerns related to graduate health and medical insurance benefits at your institution? List them separately, discuss with the group, and try to choose the three top concerns from the group.

- One of the questions that I asked as a comment field in the MAGS survey was about health/medical leave policies--whether the institution had one and what it was. Of the 26 respondents, 15 (58%) had some kind of standardized medical leave policy and 11 (42%) had no policy or let departments and programs handle leave issues independently.

Do you have a policy? Is one under consideration?

- Discuss medical/health leave policies in your group, considering these topics: the effects of unionization on leave policies, major constraints for the lack of a policy if you have none, major characteristics of the policy if you do have one, the effects on your students negatively and positively (or does it matter).

- As a result of this discussion, do you have any insights or recommendations that you would like to share with the group?

Discussion

Numerous benefits were mentioned by the participants, including: health care, childcare, vision plans, dental plans, new child leave, vacation leave, Preparing Future Faculty, summer benefits, fitness plans, numerous workshops, multi-year guaranteed stipends, professional development activities for students, international travel opportunities, liberal leave policies, family-friendly environment, first-year fellowships, dissertation fellowships, small student-faculty ratios, and career placement.

Even though only a very few of the institutions ranked themselves quite high on the scale because of benefits like liberal leave policies and multi-year benefit packages, most of the institutions in attendance rated their benefit packages rather low. Most of these institutions pointed to funding and budget constraints, and some institutions indicated state-wide insurance requirements and/or institutional policies that limited their capacity for competitive packages.

Cost topped every list as a primary issue for health insurance. Other major concerns included prescription drug plans, family benefits, quality of coverage with all plans, and dealing with terms and gaps in coverage.

Medical leave policies varied from institution to institution, but almost every institution indicated that new child leave was a critical discussion topic at the institutional level. Several of the participants had just implemented new leave policies for graduate students who were new parents.

Recommendations

Each session ended with an opportunity to share ideas and recommendations. One group probably best summarized many of the individual thoughts by declaring that health issues are a national issue and thus require a national solution. This group thought that graduate deans should bring this issue to the CGS level for a national dialogue. And most of the other discussions really revolved around making this a more visible issue and finding ways for deans across the country to at least share information. There was even one recommendation that smaller schools or states should join forces and approach insurance companies with a larger pool of students in order to obtain more competitive rates. Several public institution participants indicated that it was also a national issue tied in part to diminishing state funding formulas for public institutions. All of the participants pointed to the general funding issue: that graduate institutions were continually faced with growing priorities but diminishing resources.

Assessment and Review of Master's Programs

Mary E. Beadle
Dean of The Graduate School
John Carroll University
20700 North Park Blvd.
University Heights, Ohio 44118
mbeadle@jcu.edu

Abstract

The importance of assessment for accreditation and planning is a focus of much institutional energy. The perspectives of a successful graduate program review were discussed from both large and small school perspectives. The revised CGS Assessment and Review of Graduate Programs: A Policy Statement¹ served as a guideline for this session. Other participants were Michael Carter and Patrick Melia.

Key Questions

- Who is responsible for the program review?
- What are the specific elements included in the program review?
- What are the review procedures?
- What are the similarities and differences between program review and assessment?
- How are these guidelines used when a program may be discontinued?

Summary

Program reviews are primarily undertaken by an academic department with the support of the graduate school. The graduate school may provide resources, but it is the responsibility of a particular department to undertake the review and write the report. The report is presented to a graduate review committee. The committee evaluates the program and recommends future directions to the administration.

The program review may vary by institution but certain elements seem consistent. The review must be clearly focused around the mission of the department and the university. There should be a clear connection between mission and curriculum and the program should reflect the larger goals of

the institution. A key element in any review is the instructional efforts and effectiveness of the faculty. The review document should include a faculty profile, a description of the faculty research and scholarly activity, student faculty ratio, and other statistics related to the faculty student interaction. The use of part time instructors is important when evaluating the quality of the program. A student profile also needs to be included. Issues to discuss are advising, recruitment and retention. Financial support for graduate students and the role of graduate assistants are necessary components in assessing the role of students. Student productivity as measure by the number of theses, degree completion rates and time to degree were also mentioned as important factors.

Curriculum forms the basis of the academic program and the review needs to include a discussion of degree requirements, program structure, frequency of course offerings and current courses. Some concern was expressed about small institutions that may offer combined undergraduate/graduate course offerings, which may compromise the quality of the program.

Other considerations were facilities, support within the institution and the external environment. The review should include an assessment of internal and external factors that may influence the future of the program.

Practical concerns of doing a program review include co-ordination with other assessment efforts. There was a particular concern expressed regarding the demands of external review for education programs. The cost and administrative resources, which may include the hiring of an outside evaluator, need to be determined prior to beginning the review process. Discussion also included the ability of administration to provide a stipend or release time for a faculty member to oversee the review process. The schedule of the process and the length of time between program reviews is another consideration. For larger institutions it is not practical to undertake a large number of reviews each year. A seven year cycle may provide sufficient time for the reviews to be done in an appropriate manner.

Since the real purpose of the review is not to write a report but to improve graduate education, an action plan for improvement and a follow up schedule needs to be provided. Responses from the dean or vice president are important to ensure institutional commitment to the graduate program.

Many expressed concern over the expectation to include outcomes based assessment within the program review. One reason that elicits concern is the development of an assessment plan is a slow process and needs to become part of the academic culture. Various institutions seem to be at different stages of implementation. All agreed that assessment is important to add within the overall structure of program review.

Finally, the same program review elements and process could be used to evaluate a program that may be discontinued. An example from one institution was discussed. It is important to have a plan of completion for student's

current in the program. Also important to include is a plan for down sizing and reallocation of resources.

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Making the Best Use of Graduate Data

Sally Mikel
Director of Information Management Systems
Graduate College
University of Illinois at Urbana-Champaign
801 S. Wright Street
Champaign, IL 61820
smikel@uiuc.edu

Abstract

Over the last six years, the Graduate College at the University of Illinois at Urbana-Champaign has made great strides in developing in-house capabilities to extract and use graduate data for informed decision-making. The conversion of all student and administrative data systems at our institution from proprietary applications to SCT's Banner slowed progress, but we are once again able to focus our resources on data-intensive projects such as the NRC Assessment. Our current initiatives of building a Graduate Data Warehouse, web-based Program Profiles, and supporting the NRC Assessment of Doctoral Programs are ambitious projects that will provide a pathway for our future use of graduate data.

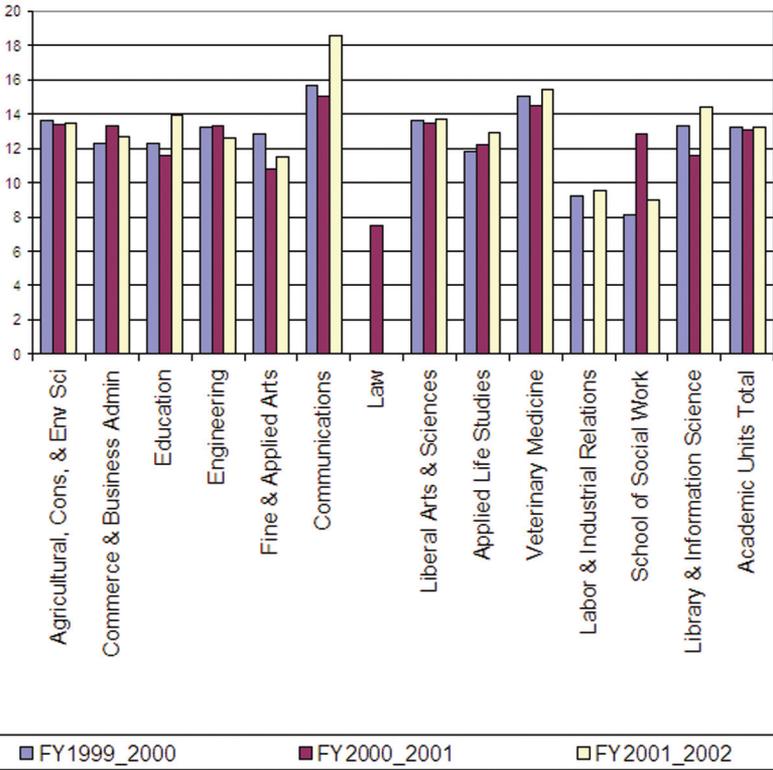
Background, History, and Original Goals

Six years ago, the Graduate College at the University of Illinois at Urbana-Champaign relied heavily on our institutional research offices to support external surveys, internal studies, and develop reports and applications to support our day-to-day processes. Occasionally, we hired outside help to assist with larger projects. Recently we have focused on establishing more reliance on our internal resources to support ad-hoc queries, develop reports, and produce data for studies on more complex topics such as time-to-degree. Essentially, we wanted to develop repeatable processes and respond in a timely and thorough manner to data requests.

Over the last several years, the Graduate College developed the capability to produce basic reports such as enrollment counts and support more sophisticated studies such as time-to-degree with reports and graphs. Our focus was not only on extracting the information, but building methodologies to report and present it in a meaningful way. Figure 1 shows a sample graph generated as part of a 2003 study on time-to-degree.

Figure 1

Mean Terms to Degree by College - From Campus Profile

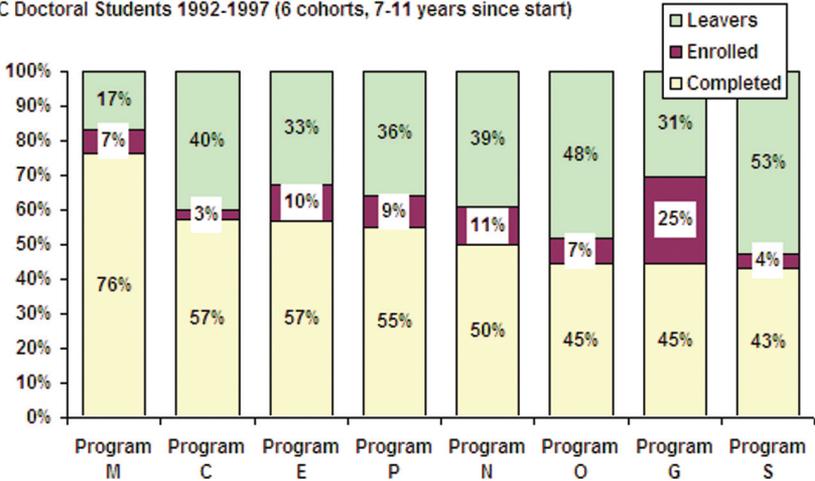


Two years ago, the Graduate College was selected to participate in the Council of Graduate School's Ph.D. Completion Project. The Ph.D. Completion Project required the Graduate College to submit completion and attrition matrices for our fourteen participating programs. Populating the completion and attrition matrices proved to be the most challenging data collection and reporting task to date, but it also provided a wealth of information about completion, attrition, and time to degree for the participating programs. The completion matrix has been recently adopted for the NRC Assessment of Doctorate Programs. In February 2006, Chris Golde, of the Carnegie Foundation for the Advancement of Teaching, used

data from the attrition matrices generated for the Ph.D. Completion Project to support her keynote address at our Graduate College Symposium of Graduate Education. She summarized the data and graphed it to show relationships between leavers, enrollers, and completers for several programs and through the progression to completion. Figure 2 shows one of the graphs summarizing completion data collected for the CGS Ph.D. Completion Project.

Figure 2

UIUC Doctoral Students 1992-1997 (6 cohorts, 7-11 years since start)



Obstacles

As our capabilities were growing, our institution was undergoing the conversion of all student and administrative data systems from proprietary applications to SCT's Banner. This meant that all of our applications, which relied on the existing student warehouse and other institutional data sources, had to be rewritten by our IT staff to extract data from new warehouses and other new data sources. Unfortunately the information technology staff was also heavily involved in assisting offices in the Graduate College through the transition of their day-to-day processes into Banner. Only recently, have Graduate College information technology resources been able to focus our capabilities on data-intensive projects such as the NRC Assessment of Doctoral Programs.

Current Initiatives

The Graduate College currently has three closely related initiatives that will provide a pathway for our future use of graduate data. These are developing a Graduate Data Warehouse, creating a web-based Program Profile, and supporting the NRC Assessment of Doctorate Programs.

The Graduate Data Warehouse

The development of an in-house Graduate Data Warehouse will provide an underlying data source for dynamic web pages, survey requests, graduate college applications, the CGS Ph.D. Completion Project, and ad-hoc requests. It will be built using Microsoft SQL Server 2005 technology. Legacy data will be incorporated on the front end of the project, and automated extract-transform-and-load (ETL) processes will be developed to regularly update the Graduate Data Warehouse with current information. This project requires a fairly sophisticated level of knowledge, hardware and software to not only build but also maintain the data warehouse.

Program Profiles

Program Profiles will provide a web-based, single page snapshot of individual graduate programs that addresses the quality of each program. This web-based tool will be available to the Graduate College staff, graduate programs, and prospective and current students to help them understand the nature of each graduate program at the Urbana campus. This will provide drill-down capability from each program's one-page snapshot to detailed information by race/ethnicity, gender, citizenship, and year of first enrollment. Security will restrict the drill-down capability by type of user. Data for each program will eventually be comprehensive and include information about applications, admissions, enrollments, degrees granted, source and mechanisms of support, completion rates, patterns of attrition, time to degree, faculty, and finally comparisons to peer institutions.

NRC Assessment

The NRC Assessment consists of four questionnaires. The Graduate College with the assistance of our other institutional research offices will provide institutional leadership and collaborate with participating programs to complete the institutional and program surveys. The data collection effort will be fairly extensive challenge for the Graduate College. It will focus primarily on assisting programs with the completion of the program questionnaires, and the activity will take place in summer and fall of 2006. We plan to develop a significant portion of the Graduate Data Warehouse as part of the preparation for the NRC Assessment.

Conclusion

The Graduate College at the University of Illinois at Urbana-Champaign has made great strides in developing in-house capabilities to use graduate data for informed decision-making. Our current initiatives of the Graduate Data Warehouse, Program Profiles, and NRC Assessment bring us even further along, but these are ambitious projects that will take several years to accomplish.

Responsible Conduct of Research

Bill Wiener
Vice Provost and Dean
Marquette University

Gail Scukanec
Interim Dean, College of Graduate Studies
Central Michigan University

Sherri Kirsch
Contract Administrator
Marquette University

Abstract

Responsible conduct of research is typically described as consisting of 8 areas which include: Data acquisition and management, mentor trainee relationships, publication practices and responsible authorship, peer review, collaborative science, human subjects, research involving animals, research misconduct, and conflict of interest and commitment. This workshop focused on three core components of research ethics. Topics covered include data acquisition, management, sharing and ownership; intellectual property and responsible authorship; and research involving human subjects.

Research Ethics vs. Responsible Conduct of Research

Today we hear much about research ethics and also responsible conduct of research. While the two are related, research ethics is the more encompassing term. It relates to the study of moral problems associated with research and their application to decision making. Ethics poses this question: What should one do to be ethically responsible? Responsible conduct of research focuses more on how one is to conduct research in a way that fulfills professional responsibilities or what is required.

Data Management: Maintain Data Value and Integrity from Beginning to End

One of the basic tenets of responsible conduct of research is maintaining the integrity and value of one's research data. Data is the foundation upon

which all other tangible records and benefits of a research project are created (i.e., progress reports, publications, patentable inventions, etc.). A Principal Investigator (“PI”) is responsible for the proper collection, documentation and control of data obtained under his or her research project.

The Faces of Research Data: Technical, Third-Party and Administrative

An important principle in maintaining data integrity and value is to remember that “research data” does not exist just in the end result(s) of a project. Research data comprises the entire record of a research project. A project’s technical data begins with the initial ideas presented in the research proposal and includes all activities, methods, modifications and results (anticipated or not) leading up to the end result. The responsible PI needs to ensure that appropriate research protocols are established and that all research team members are made aware of and appropriately follow the established protocols.

Depending upon the size and scope of the current project, a PI will at various points in his/her career depend upon one or more third parties for portions of research data. A PI has several major responsibilities in managing third party data, depending upon the source and nature of the data. When data is provided by a research team member, a sub-consultant or another party over whom the PI has oversight responsibility in terms of the project, the PI has the responsibility and the authority to insist upon appropriate standards and procedures for collecting, interpreting and maintaining the data. When using data obtained from industry partners (i.e., trade secrets), any human subjects studies or studies involving under-aged participants, the PI has additional responsibility for ensuring that use and disclosure of data under these circumstances complies with appropriate privacy and/or confidentiality regulations, whether these are defined by law or by written agreement. (Macrina, 2005)

An equally important, but often underestimated, portion of research data is documentation of the administrative oversight of the research project. Administrative data includes financial records, effort reporting, conflicts of interest disclosures and other “housekeeping” measures put in place to ensure that a sponsor’s funding was spent appropriately and that the resulting research efforts were conducted in an unbiased, objective manner. Often perceived as a burdensome annoyance, administrative data nonetheless plays a vital, if less-than-glamorous role in the integrity of research data. (US Department of Health and Human Services, 2005; National Science Foundation,2005).

Minding the Store: Access Control, Quality Compliance and Retention

When determining who may access research data, a researcher must consider various factors, such as contractual obligations to the Sponsor, maintaining the University’s primary function of distributing information for the greater

good and the reason access is requested. The outcomes for each case vary depending upon these individual factors. With federally sponsored research, the government by law reserves a perpetual, irrevocable right to access federally funded research data and to authorize access by other parties. (Macrina, 2005). A corporate sponsor may have the right to review proposed publications to protect its proprietary information while not having the right to suppress publication or alter research results. A University investigatory committee may require access to data in the event a PI is accused of research misconduct. (Marquette University, 2006).

A PI, as an agent of the university, is ultimately responsible to the sponsor for the integrity of the research data. Therefore, a PI needs to set the standard for the integrity of technical data. Accordingly, the PI needs to be diligent about establishing protocols and documentation standards, appropriately orienting and monitoring research team members and service providers to ensure established standards are met and taking the appropriate remedial action to address deviations or deficiencies. (Macrina, 2005; (Yale, 2005).

Retention requirements for a set of data will also vary, depending upon Sponsor and/or contractual obligations. Research data must be kept at least until all surviving obligations to the sponsor have been satisfied. This may require keeping the data for several years beyond the project end date. Obviously, where data is supporting the pursuit of a patent application or similar intellectual property protection, it may be necessary to protect such data for an indefinite period of time to protect the University's interests in the event of a dispute. (Macrina, 2005).

Proper storage of research data is also an important consideration, whether the data is in hard copy or electronic format. In either case, proper storage precautions should be taken to prevent unauthorized access or tampering (locked storage, encryption, passwords, electronic access logs, etc.).

Who Owns What – Determining Ownership of Research Data

When considering the data ownership issue, it is important to look not only at the individuals who conducted the research, but who provided funding, facilities or other resources so that the research could proceed. For example, the university may claim ownership of a researcher's data if the researcher primarily used the university's resources to conduct the research. (Macrina, 2005). Third party funding is considered a "university resource" when the university accepts funding at the request of and on behalf of the faculty researcher.

The university must also ensure that it retains the right to use research data for teaching, publications (including student dissertations and theses) and future research efforts. Therefore, the university must carefully evaluate the terms and conditions of a sponsor's offer of support and avoid any situations where researchers may be prevented from publishing their findings or continuing their research in a given area or where a student's progress toward graduation may be compromised. (Macrina, 2005).

Intellectual Property

The concept of intellectual property dates back to 13th century Europe where guild members wanted to protect the secrets of their craft. They joined with the State to safeguard the keeping of trade secrets (Long, 1991). For example Venetian glassmakers protected their craft secrets by forbidding the sharing of formulas with others unless they were members of the guild and serving as apprentices. The concept of modern copyright first appeared in Britain in the seventeenth century in order to provide a monopoly for the printing industry. Only later did copyright evolve into protection of intellectual property of the author (McSherry, 2001). Today, intellectual property includes written documents, discoveries, computer software, tangible research property, and industrial processes. Intellectual property may be protected through such means as copyrights, patents, trademarks, service marks, and trade secrets.

There is a general policy regarding copyright that is followed by most universities. By tradition faculty are assigned most property rights in unpatentable works of scholarship so that they are free to publish without restriction from the administration of the university. Faculty, students, staff, and others who publish textbooks, scholarly books, or other written documents are entitled to ownership unless the material was prepared at the specific request of the university and special remuneration was provided by the university for the commissioned work. For example, a faculty member engaging in scholarship holds the copyright to that scholarship and is free to publish. However, if the university commissions and pays a faculty member to write a document, the copyright belongs to the university. Of course in the case of sponsored research, ownership of copyright must follow the guidelines agreed upon in the contract or grant.

Ownership of patentable works is generally shared between the inventor and the University. Typically, a University will evaluate a discovery and determine its commercial potential. If found to have commercial viability, the university may invest in obtaining a patent. If unsure of the commercial application, the university may release total ownership to the faculty inventor.

Responsible Authorship

While the holding of copyright is generally understood, issues relating to authorship are less clear among the various professions. The order of authorship varies widely and disputes among faculty and students can arise due to differences in perception. In some professions the individual who has contributed the most to a project is listed as the first author while in other professions that individual may be listed last. In other disciplines alphabetical order may prevail. In some laboratories, hidden authorship occurs where the leader of the lab is listed among the authors on projects in which he or she contributed little.

With practices on authorship varying so widely, it is essential that the order

of authorship be pre-negotiated before research is conducted. Often misunderstandings arise when authorship is left to chance. According to Barker, (2002) authorship decision occurs at the local level and that is where a breakdown in communication occurs. It is therefore imperative for collaborators to understand the rules in their environment relating to authorship. Each PI should make sure that everyone in their lab knows the rules. Collaborators who do not understand the authorship rules should inquire before beginning research. Cho and McKee (2002) have stated "(B)ecause of its critical importance to the careers of scientists, authorship is shaped by social customs. Like other customs, authorship is usually not determined by explicit criteria and not 'discussed in polite company.'"

Most codes of ethics of professional associations state that principal authorship and publication credit should accurately reflect contributions of the individuals responsible and not be based upon their relative status. While it is generally accepted that each person named as an author should have made a significant intellectual contribution to the paper, there is not complete agreement on the types of contributions and on what constitutes a significant contribution. In order to resolve this ambiguity, the International Committee of Medical Journal Editors (2001) proposed a series of guidelines to be used to identify authorship. To be a legitimate author, one must have sufficient participation for public responsibility for portions of content. The individual must have provided substantial contributions to the conception and design, acquisition of data, or analysis and interpretation of data. He or she must have been involved in the drafting of the article or in the critical revision for intellectual content. The author must have sufficient authority to control final approval of the version to be published. Acquisition of funding, collection of data, or general supervision of the research group, in and of themselves do not equate with authorship. Furthermore, it is proposed that authors should provide a description of what each person has contributed to the author. All others who supported the development of the article should be acknowledged. Finally the order of authorship should be a joint decision of the coauthors.

Authorship of students has its own ambiguous status. Some faculty list students as first authors because they feel they are in need of the exposure while other faculty list students at the end or fail to list them at all. The Chicago tribune categorized the university practices of authorship as feudal in nature explaining that the faculty are the lords and the students are comparable to serfs who till the land but get little credit (Grossman, 1997).

At most universities, students own the copyright on their research when there is no direct remuneration to them for the product. The definition of remuneration does not include funds from research assistantships, teaching assistantships, or fellowships. Instead remuneration occurs when a student is paid specifically to conduct the research. As in the case of faculty, sponsored research has its own rules of ownership.

It is clear that when a student generates a thesis or a dissertation as part of an academic program of study, he or she is the author of the manuscript. The thesis and particularly the dissertation is an exercise in which the student must demonstrate that he or she can take responsibility for the generation of new knowledge. This often includes collecting original data, analyzing the resulting information, and providing an interpretation. Therefore independent authorship is required. Often however, the thesis or dissertation will later form the basis for a peer reviewed journal article. When this occurs, a major advisor may be listed as an author but the graduate is listed as the principal author.

Ethical Research Utilizing Human Subjects

Research involving human subjects is not new. In fact, such research is mentioned in the bible which dates back to the 6th century BC. Cleopatra was even involved in conducting human subjects research. In the 19th century a fair amount of medical research was documented and, since the turn of the 20th century, extensive research has been conducted. Research in the early 1900's often involved prisoners or children, and sometimes women. In the early 1930's the famous Tuskegee research began and in the 1950's and 1960's research on mentally disabled individuals and ethnic minorities was common.

Since 1900, there has been a move to ensure that research utilizing human subjects was conducted ethically. This began with the Berlin Code of Ethics which stated that children and incompetent adults cannot participate in research, subjects must be willing to be involved in a research project, and the protocol of a research project must be explained fully to research subjects. Then, in 1979, the Belmont report focused on three factors to be observed in human subject research: respect for persons, beneficence, and justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). In order to act responsibly and, therefore, ethically, in human subject research, the investigator must outline the following in order to address the above mentioned three factors.

In order to demonstrate respect to individuals in research, subjects must be treated as autonomous agents, and those with diminished autonomy must be protected. The mechanism for this within institutions is through informed consent. In other words, subjects must be informed about the procedures of the research project and the risks and benefits of the research project, and they must have the choice of whether or not to participate in the research project. Beneficence in human subjects research requires that benefits are maximized and harm minimized. The researcher must demonstrate that, for the level of risk of the project, there will be sufficient benefit either to the individual or to a group of individuals. Benefit can be health-related, psychological, or some other value. Justice is related to who benefits from the project versus who bears the burden of the project. Prisoners, for instance, should not face undue risk if there is no specific benefit to prisoners from the project. (National Institutes of Health, 2005).

While protecting human subjects in research is not new, there are certainly current issues in the area. There is, amongst some Institutional Review Boards (IRBs) approving human subject research at institutions, some hyper-vigilance in the process. At least one national association has taken steps to assist IRBs in evaluating research that is not medically related research. While some hyper-vigilance in the review process occurs, there is also some hypo-vigilance in the process. Instances of unethical research with human subjects still occurs where IRBs have not reviewed projects closely enough. Another current issue relates to medical research involving clinical trials in developing countries. Such research is much less expensive than clinical trials in the US, but sometimes does not undergo ethical review.

It is our responsibility, as an institution, to design our policies and procedures for research involving human subjects and to ensure adherence to the policies. Generally, such policies and procedures apply to faculty, staff, and students. We must continue to evaluate how best to review human subjects so as not to negatively influence the research process but to ensure safety and protection for human subjects.

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An Update on the Revised GRE General Test

David G. Payne
GRE Executive Director
Educational Testing Service
Rosedale Road, MS 08-L
Princeton, NJ 08541
Dpayne@ets.org

Abstract

The GRE Board and Program have been working on major revisions to the GRE General Test for several years and the revised GRE General Test is scheduled to be released in September 2007. These changes that are being made in the General Test will affect all applicants and institutions that use GRE General Test scores. This article describes the four primary motivations for revising the GRE General Test and also some of the ways in which these revisions will help address important issues. The article also describes some of the important operational and psychometric changes that will be made when the revised GRE General Test is launched.

Introduction

The GRE General Test is undergoing significant revisions and when it is launched in the Fall of 2007 there will be major changes in all three sections of the Test (Verbal Reasoning, Quantitative Reasoning, and Analytical Writing). These changes are intended to address four primary objectives:

- Increase the validity of the test
- Address security issues with the current General Test
- Provide faculty with better information on applicants' performance
- Maximize technology so as to deliver a cutting edge test for applicants and effective test results for graduate schools

The validity and security of the test will be increased by, among other things the changing the nature of the items used in the test and delivering the test in a linear format that will greatly enhance test security. This next section will review the major changes that are being made to the three sections of the General Test.

Changes Planned for the Verbal, Quantitative and Analytical Writing Sections

The Verbal Reasoning section of the revised test will have a greater emphasis on skills related to graduate work such as complex reasoning. The revised test will include a number of new item types that will place a greater emphasis on

higher level cognitive skills as compared with some of the current GRE items that assess verbal reasoning using single word item types (e.g., antonyms, analogies). The Verbal Reasoning section of the revised test will also have more text-based materials such as reading passages and a broader selection of reading passages. Note that samples of item types for all three sections of the revised General Test can be found at the GRE website (www.gre.org).

The Quantitative Reasoning Section the revised test will retain the same level of mathematic content as the current test, but will add new item types and change the proportion of various item types used in the test. The revised test will focus on quantitative reasoning skills that are similar to skills typically used in graduate school. For example, there will be more items involving “real-life” scenarios and data interpretation. In addition, the test will feature an on-screen 4-function calculator with square root, thus making the reasoning task environment more analogous to what students face in graduate school.

Another change that is being made in both the Verbal and Quantitative Reasoning sections is that the proportion of each item type will be changing. For the Verbal Reasoning type this is most evident in the removal of the antonym and analogy items and the introduction of several new, more text-based item types. In the Quantitative Reasoning there will be a smaller proportion of geometry items and more data interpretations and real item types (i.e., those item types that require test takers to either interpret data or use quantitative information to solve a real-world problem).

The Verbal and Quantitative Reasoning sections will also benefit from the introduction of new item types that take advantage of the computer as a modality for delivering test questions. For example, in the Quantitative Reasoning section some items will require examinees to enter numbers (e.g., in an equation), rather than simply selecting the correct answer.

The revised Analytical Writing section will also feature several changes including the use of new, more focused prompts that will reduce the possibility of reliance on memorized materials. In addition, there will be limited or no reuse of prompts, which will help address both validity and security concerns.

Essay Distribution for the Analytical Writing Section

Another significant enhancement that will be introduced with the revised General Test is that essay responses will be made available electronically to designated score recipients. That is, if an applicant applies to, say, Duke University, the University of Washington and Massachusetts Institute of Technology, then faculty at these three institutions will be able to read the actual essays written by this applicant.

To access essays for applicants, score recipients will visit a web site to view/print essay responses for any of their applicants. The GRE Program has conducted

a number of focus groups to learn about operational concerns from faculty and admissions staff and we are working to develop an essay distribution system and user interface that will meet the needs of the institutions that receive GRE scores.

One area in which Graduate Deans can play a critical role in the success of the revised GRE test concerns the appropriate interpretation of the Analytical Writing Essays.

It is critical that faculty understand the nature of the Analytical Writing tasks and the conditions under which the essays were written (e.g., a short time [30 minutes], a high stakes testing environment, a word processing system with no spell check or grammar check). If faculty appreciate these factors then they will be less likely to view the Analytical Writing essays as samples of a candidate's best writing, but rather to appropriately view the essays as writing samples written in a short time, under pressure, etc.

Ensuring Access to Test Centers and Enhancing Test Security

In addition to introducing new item types and refining existing item types, the revised test will also include a change from the current continuously available computer adaptive test (CAT) format that is used in most parts of the world. This change is being made to address a security issue. Several years ago the GRE program determined that in several regions in Asia, examinees were memorizing questions from the CAT and then sharing these items with other test takers. In response to this discovery, the Program stopped the continuous CAT administration and began offering the Verbal and Quantitative Reasoning sections in a traditional, linear test in which tests are administered on only fixed administration dates with each administration involving a new form of the test. This change addressed the security problem in the targeted areas, but the possibility of similar security problems in other areas is one that has concerned the GRE Board and Program.

The revised GRE General Test will also use linear forms administered on fixed testing dates. The switch to a linear test with little or no item reuse and the use of fixed administration dates effectively deals with the potential security problem that faces any continuously available CAT testing program. When the revised GRE General Test is introduced, the two largest tests used in graduate admissions in North America (GRE and TOEFL iBT) will both be linear tests. This represents a significant improvement in test security over CAT tests.

The GRE Program is also greatly increasing the ease of access to the GRE test by adding many hundreds of new testing centers around the world. The revised GRE General Test, like the new TOEFL iBT test, is going to be delivered via the internet in proctored test centers around the world. There will be two methods of using the internet for test purposes.

First, ETS will continue to partner with Thomson-Prometric for our computer-delivered tests worldwide. Prometric will both manage our testing network and also provide some fixed, dedicated “bricks and mortar” testing sites. Second, in addition to these fixed, dedicated testing centers, we will also have a parallel network of testing centers at colleges, universities and other organizations around the globe. These partners will utilize existing computer resources (e.g., computer laboratories or university testing centers) that have internet access to deliver ETS tests on specified dates. These institutions will be compensated for their expenses and, importantly, they will also be able to provide access to tests such as the GRE and TOEFL iBT for their students and/or local residents.

ETS’s experience with the TOEFL iBT has shown that the new internet based testing paradigm works extremely well. The TOEFL program has been using the internet to deliver the TOEFL test since September 2005 and the software and testing center procedures have worked virtually flawlessly. When the revised GRE General test is launched this same set of software and testing centers will begin to benefit GRE test takers.

By creating a very large network of these centers ETS is able to keep testing expenses as low as possible while at the same time creating a testing network that greatly increases access for examinees around the world. The ETS Certified Education Partner (ECEP) Program is a world wide internet-based testing network that involves ETS’s traditional partners and stake holders (e.g., colleges, universities, overseas student-advising centers).

The ETS Channel Expansion team is currently working to sign up institutions that are interested in becoming a part of this network. Institutions that are would like to learn more about the ECEP program and/or applying to be an ECEP Center can visit us online at: www.ets.org/ecep. Alternatively, you can e-mail questions or inquiries to us at ecep@ets.org.

Test Administration Changes

The revised GRE General Test involves a large number of changes in test administration procedures that will improve security, improve access for test takers, etc. For example, in addition to the switch to linear tests, the GRE Program will also introduce staggered local start times for testing to address the issue of time-zone cheating (i.e., test takers in earlier time zones taking the test and then electronically sending information to test takers in later time zones.) The use of staggered local start times means that in real time the test will start and end at approximately the same time, but the local time will vary.

Table 1 summarizes the main changes in the administration of the GRE General Test that will enhance access to tests and security concerns.

Table 1	
Comparison of Current and Revised GRE General Test	
Current GRE General Test	Revised GRE General Test
Continuously available Computer Adaptive Test	29 Fixed administration dates and Linear Tests
Question pools in continuous use	New test form on every test date
About 600 test centers worldwide	More than 2500 test centers worldwide
Dedicated computer-based testing centers	Existing language labs, computer labs, etc., reserved for ETS testing purposes
Local start times	Staggered start times

New Score Scale for the Revised GRE General Test

As a result of the significant changes in the Verbal and Quantitative Sections of the test, the GRE Board has approved new score scales for the Verbal and Quantitative sections. Scores from the revised General Test will not be on the familiar 200 – 800 scale, but rather they will be on a new score scale that is anticipated to be a 40 - 45 point scale located somewhere in the range of 100 – 200 in 1-point increments. (The exact number of points on the scale will be determined once the test is administered in an operational mode in September 2007.)

The current 200-800 score scale (in 10 point increments) for the GRE General Test is a 61 point scale. Because of the switch from a CAT to a linear test, along with changes in other test specifications (e.g., number of items in the Verbal and Quantitative Sections), the new score scale will involve fewer score points. The 100-200 range was selected because there are no other GRE Scores in this range. (Some of the GRE Subject tests have subscales below 100 and some Subject Test scales go above 900).

The final decision on the “placement” of the new score scale in the 100 – 200 range (e.g., the mean for the new scales) will be determined based on input from the graduate community. It is important to note that the new score scale will be a three digit scale just like the current scale, so this should mean very few institutions that receive GRE scores will need to change their admissions information systems.

Another advantage of the new score scale is that score users will be less likely to misinterpret small score differences as reflecting significant differences. That is, while the difference between a 600 and a 630 may seem like a large difference, a 150 vs. a 153 seems like a subjectively smaller difference. Thus the new score

scale will also help users in appropriate score use. Note that the GRE Board has endorsed a Statement on Appropriate Score use that deals with issues such as the interpretation of small score differences. This statement can be found in the Educators section of the GRE Web site.

The GRE Program will provide Graduate Schools with concordance tables that will allow the schools to compare performance on the current revised General test. This is essential because GRE Scores are reported for 5 years, which means that for several years programs will have applicants who have scores from the 200-800 scale and/or scores from the new scale. The concordance table, along with percentiles for the new test, will be available after the first several administrations of the revised test.

Summary

The GRE Board and Program are excited about the revisions being made to the General Test. We believe that the new General Test will provide decision makers with improved measures of Verbal, Quantitative and Analytical Writing abilities that will aid in the evaluation of graduate applicants for admission and funding. The essay distribution will provide score users with a writing sample that is known to have been written by the test taker, and this should prove very helpful to faculty. We are confident that the graduate community will find the data from the new General Test to be very useful. Additional information will be available on the Educators section of the GRE Website (www.gre.org). Readers interested in receiving up-to-date information on the revised GRE and other GRE Program initiatives may sign up for the GRE Newsletter on the GRE Website.

Professional Science Master's Degrees: Perspectives from the CGS PSM Advisory Board

Carol B. Lynch
Senior Scholar in Residence and
Project Director, Professional Master's Programs
Council of Graduate Schools
One Dupont Circle NW, Suite 430
Washington, DC 20036
clynch@cgs.nche.edu

Introduction

The Professional Science Master's (PSM) initiative was started by the Alfred E. Sloan Foundation in 1995, with the first grants for developing programs awarded to doctoral research universities in 1997. The partnership between the Sloan Foundation and the Council of Graduate Schools began in 2001, expanding the PSM to include planning and implementation awards to "master's focused" institutions. A combination of the original Sloan program and the CGS extension has resulted in 108 PSM programs in 55 institutions.

In 2003, building on the Sloan/CGS PSM model of planning and implementation grants, the Ford Foundation also partnered with CGS to develop a professional master's (PMA) project in the social sciences and humanities. All CGS member institutions were eligible to participate in this project, and as a result 18 institutions have developed 26 new PMA programs.

In January 2006, CGS was funded by the Sloan Foundation to assume the primary responsibility for promoting and expanding the PSM concept with the goal of institutionalizing the PSM as a major feature of graduate education at the master's level.

There are a number of key stakeholders in the PSM initiative, so in establishing a PSM Advisory Board, CGS chose individuals who would help us understand the needs and perspectives of our various constituencies. We have a knowledgeable and enthusiastic Board made up of five deans who have PSMs at their institutions, five PSM Program directors, and five representatives from industry and policy agencies. In the following sections, three members of the CGS PSM Advisory Board will share their advice and perspectives.

Professional Master's Programs: Perspectives from a Graduate Dean

Karen L. Klomparens, Dean
Graduate School
Michigan State University
110 Linton Hall
East Lansing, MI 48824-1044
kklompar@msu.edu

Abstract

Professional Master's degree programs are excellent educational opportunities for graduate students and provide the private sector with valuable employees. Elements of program success include a collaborative model for business and communication skills that supports all of the professional science master's programs, a faculty champion, support from both the college dean and the graduate dean, and a link to local and state businesses and industry for both internships and advisory board membership. Challenges to developing and nurturing professional science master's programs at research extensive universities include disciplinary cultures, availability of resources, and competitive pressures from doctoral programs. Michigan State University has several successful professional science master's programs, including one that is largely online.

Developing Professional Science Master's Programs: Opportunities

Professional Science Master's degree programs provide a unique educational experience for graduate students interested in the sciences, but who may not wish to pursue the extensive research required for a Ph.D. dissertation. The combination of applied problem-solving and skills in business and communication result in a program that prepares students for immediate employment in a wide variety of sectors. This is highly attractive to many students. The number of students enrolled in professional science master's programs around the United States indicates the growing level of student interest: between the first set of graduates in 2000 and 2004, 449 students were awarded professional science master's degrees (Sims, 2006).

Congress recently expressed an explicit interest in professional science master's programs as part of a series of sponsored legislation aimed at American Innovation and Competitiveness. The Committee on Commerce, Science, and Transportation issued a statement, signed by Senators Lieberman and Ensign on March 15, 2006 as part of the National Innovation Act, that specifically mentioned

Professional Science Master's degrees that "couple business or legal training with a traditional science or engineering discipline to create a cadre of new professionals with broad skills in both business and science."

Developing Professional Science Master's Programs: Challenges

At research extensive universities, Master's degree programs in the sciences are not typically designed to accommodate a student with purely applied interests in a terminal degree, nor are they considered by most faculty members as a degree in which to invest their limited resources. The Ph.D. is the terminal degree and commands most of the resources, including faculty time, effort, and interest. This focus on doctoral education is also supported by the mechanisms by which federal agencies support graduate students via research and training grants.

For these reasons, developing professional science master's degree programs at a research extensive university can be challenging! In addition, the opportunities to provide professional development in business and communication skills and to find community partners for internships and/or defined applied problems may vary greatly depending on the location of the institution. An institutional culture that includes the balance between "top-down" and/or "bottom-up" initiatives for professional science master's program development, the availability of central resources as an incentive, and a supportive attitude of the college dean and graduate dean regarding the balance of master's degree and doctoral programs in the institution are important considerations.

Professional Science Master's Programs at Michigan State University—Elements of success

Considering the opportunities and challenges, how do successful professional science master's programs develop at a research extensive university and what are the elements of that success?

Experience at MSU points to the following:

- leadership provided by a faculty champion,
- persistent vocal support by the college Dean and the Dean of the Graduate School,
- internships or problem-solving opportunities valued by local and state industry, business, non-governmental organizations, as well as the campus
- high quality professional development program or programs,
- external industrial science board of advisors, and
- appropriate level of dedicated resources.

What do these critical elements look like in practical terms?

Our Business Management and Communication (BMC) Skills Certificate Program was developed to support the array of professional science master's programs (http://grad.msu.edu/all/bus_mgt.htm) at MSU. Students from all

professional science master's programs enroll together providing an energizing cross-section of disciplines and interdisciplinary areas. Students pay a fee for the program separately from regular tuition, although approximately 70% of the cost is underwritten by the College of Natural Science and the Graduate School. The Program is designed to give participants the broad business management background and written and oral communications skills necessary for success in a variety of employment sectors.

The BMC Certificate Program is completed in 9 two-day modules in an executive management style experience (Friday 4:30PM-9:30PM and Saturday 8:30AM-3:30PM) and one additional special etiquette reception/dinner. One module is online with a short discussion period in order to provide a learning experience that is expected to grow in frequency and availability as a continuing education option. The BMC program is completed in one academic year.

Topics covered in the BMC Certificate Program, which were recommended by the College of Natural Science Industrial Board of Advisors, include:

- Financial Management
- Marketing Management
- Managerial Accounting (online)
- Micro and Macro Economics
- The Legal Environment of Business
- Presentation Skills
- Writing for Clarity
- Negotiation and Consensus Building
- Project Management
- Making Work Groups Effective

The regular tenure-stream faculty in the College of Communication Arts and Sciences and the Eli Broad Graduate School of Management developed the modules with input from the external business and industry science board of advisors. These faculty are instructors in the MBA and/or graduate programs in their respective colleges and most have business/industry experience and/or executive education experience, as well as consulting experience. The Dean of each of these colleges facilitates the selection of faculty instructors and works with the Graduate Dean on module evaluation. Faculty receive overload pay (generated from the fee that students pay for the Program).

Because the Program instructors are regular MSU faculty, the completion of the certificate is officially recognized on the MSU transcript. For a research extensive university with a focus on doctoral programs, this point is very important. The elected faculty on the University Graduate Council (the MSU governance body with delegated authority for graduate curriculum and program matters) fully supported the Certificate for explicit recognition on the transcript, because it was taught by regular faculty who participate in graduate education.

Two specific examples will serve to highlight the other critical success factors:

the Professional Science Master's Program in Industrial Mathematics and the Professional Science Master's Program in Food Safety.

Industrial Mathematics

(<http://www.math.msu.edu/Graduate/msim/>)

Begun in 1999-2000 with support from the Alfred P. Sloan Foundation, the Professional Science Master's Program in Industrial Mathematics is the initial and most successful of the MSU professional science master's programs with 57 graduates and 12 currently enrolled. The goal of the program is to produce generalized problem-solvers of great versatility, capable of moving within an organization from task to task. Prior to the applied project, all students complete the Business Management and Communication Skills Certificate Program described above.

Students are required to spend one semester working on a "real world" problem proposed by external partners. More than 40 projects from partners including a variety of state and local small and large businesses, hospitals, state and county governments, and MSU departments have been completed. Graduate students work with a faculty member, as well as undergraduates on these applied problems, forming an intergenerational team. The team formally presents the results of the project to the external partner at the end of the semester.

The external partners form a board of advisors who visit the campus twice a year. In the Fall, the advisors come for an "Industrial Advisor Contact Day" to set up one-on-one mock interviews with the students in the program in order to set up the "real world" problems experience. In the Spring, the advisors provide input to the Department Chair and the Program Coordinator on the curriculum and direction of the program.

The final certifying exam for the program consists of an oral "portfolio" defense before three faculty members. The portfolio is a collection of evidence from the core mathematics coursework and the external project, and includes a short "elevator speech" about the research project, and a demonstration of the understanding of the underlying mathematics required for the applied project solution. The defense is also judged on the presentation skills demonstrated by the student.

Because these students are excellent and highly visible within the department, approximately 20% of the graduates were recruited during their required cognate courses to continue in the Ph.D. program in Mathematics. While enrollment in a subsequent Ph.D. program is not the goal of professional science master's programs, this may be a consequence of having programs at research extensive universities where faculty, focused on doctoral education, are always looking for good students. This recruitment into Ph.D. programs may also be viewed as positive reinforcement for the faculty in departments with professional science master's programs in doctoral extensive universities.

Success in this program, in large measure, is due to a faculty champion; a senior faculty member with the energy and focus to oversee the development and first critical years of the program. Resources from the Department and College, such as teaching assistantships, the Graduate School, such as the BMC Certificate Program, and eventually the Provost, provided the means to hire an additional staff member for recruitment and oversight of both students and industrial partners.

Food Safety

(<http://www.foodsafe.msu.edu/education/proms/index.htm>)

Food Safety is a largely online professional science master's program, with a required 10-day summer introductory module that results in a hybrid or blended model of instructional delivery. During the summer module, students begin to develop into a community of learners, complete a version of the Business Management and Communication Skills Certificate, and define a special applied project that will be completed over the duration of the program. Graduate students are usually actively employed with a typical cohort being 60% in business/industry and 30% in local, state, or federal governments. There are international participants in each of the 4 entering cohorts. Since its beginning in 2002, the program produced 20 graduates and has 60 currently enrolled.

The popularity of the program continues to increase as the topic of food safety grows in importance nationally and internationally. The online delivery model provides an educational opportunity to a segment of society that could not otherwise participate in higher education. The private sector supports the program since it allows them to send their best and brightest employees to a high educational quality program while still retaining them. The need for additional forms of education in food safety, without the full effort required for a master's degree, was recently made clear by the industrial board of advisors. So, by request from a variety of food industries, the program faculty are currently working on a certificate that would consist of 3-4 of the courses from the professional science master's program.

Success of this program is again dependent on a faculty champion, dedicated resources from the MSU National Food Safety and Toxicology Center, and an explicitly defined state, national, and international need for educated technical personnel in the area of food safety. This program also has a dedicated staff member, in addition to the faculty leader.

Professional Science Master's Program evaluation

Do professional science master's programs deliver what they promise? Are they a worthwhile investment of faculty time and other institutional resources in a time of fiscal constraint and focus on doctoral education? These, and other outcomes questions, are still under evaluation, but preliminary evidence, such as enrollment, successful placement, private sector and student satisfaction,

suggests that professional science master's programs are a success and will continue to grow. Sims (2006) provides a discussion of assessment of the professional science master's programs, as well as sample survey instruments.

At MSU, and elsewhere, professional science master's programs are being evaluated in a variety of ways. The intellectual coherence of the programs is part of regular graduate program review. The options for development of a community of learners for team projects are many, including the intensive summer module in Food Safety, the Business Management and Communication Skills Certificate Program, and the "real world" problem projects of Industrial Mathematics. Student learning can be directly assessed by coursework, certificate program practical demonstrations, and project completion and portfolio defenses; and indirectly assessed by the industrial partners who benefit from the completed projects and employers who hire the graduates. Food Safety faculty are experimenting with online portfolios as a method of assessment.

Conclusion

Professional science master's programs are a valuable and growing part of the landscape of graduate education. While many such programs can be expected to flourish in Master's focused institutions, research extensive universities also provide high quality programs in areas of disciplinary strength. The educational opportunities for the students and opportunities for problem-solving for local and state private and governmental sectors are both important incentives, especially for public universities. The challenges to development and sustainability of these programs, while not trivial, can be overcome with attention to the context of graduate education in each institution, support of a faculty champion, and the collaboration of university and external partners. The recommendation to institutions considering the development of professional science master's programs is to adapt, not adopt from the many models for professional science master's programs that currently exist nationwide.

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The Professional Science Master's Degree: What Next?

Donald N. Langenberg
Professor of Physics and Electrical Engineering
University of Maryland, College Park
College Park, Maryland 20742-4111
dnl@usmd.edu

The basic concept upon which professional science master's (PSM) degree programs are based is almost self-evidently a good idea. Science and technology innovation by highly skilled individuals has become the key natural resource in an increasingly competitive global economy. No part of the world has a monopoly on the raw material of that resource. Smart humans are born everywhere every day. What distinguishes the more successful societies from the less successful is their ability to educate and train true innovators and to provide them with an environment in which they can fully exploit their talents and capabilities.

It is increasingly obvious that a high level of scientific and technological expertise is necessary in a rapidly widening array of careers. Gone are the days when most enterprises only occasionally needed some sort of special expertise and, when they did, could simply go out and temporarily hire an appropriate nerd. Gone are the days when a generic management expert with an MBA from some fancy business school could successfully lead a biotechnology business by spending a few hours boning up on what the acronym DNA means. These days, often as not, that business's CEO has a PhD in genomics.

And therein lies part of our challenge. Few institutions in our world are as resistant to change as universities and, within universities, traditional graduate programs are perhaps the most obdurate resisters. They are, after all, fundamentally focused on the replication of their species in the best Darwinian manner. In the sciences particularly, university graduate programs are designed to train research practitioners who will emulate the professors who run them. That means culling out those students with different interests and guiding the select remainder toward the PhD degree. In this environment the master's degree has become either an unimportant milestone on the path to a doctorate or a consolation prize for those who fail on that path.

That traditional science graduate programs may graduate someone who later demonstrates that he/she can in fact successfully run a biotechnology business or a university (me, for example), but that's an accidental and unintended outcome. Is it not plausible that in today's technologically competitive world, there is a need for scientists and technologists with most of the skills and abilities

that research PhDs possess, but who have also actually acquired the tools necessary to manage complex enterprises? The answer is resoundingly yes, and the academic mechanism is the PSM degree program.

PSM programs are “science plus”! They train real scientists who are also prepared to lead and manage in diverse environments. Their graduates may enter careers in a wide variety of enterprises, from government to business. They may be venture capital executives, making decisions about new biotech opportunities in which to invest. They may be patent examiners, deciding which new intellectual properties to protect and which not to protect. (It might be noted that this is not really a novel career path. A century ago the Swiss patent office hired a new examiner from Switzerland’s equivalent of MIT. In his spare time from his day job, the young Albert Einstein revolutionized physics.)

It is important to note that developing PSM programs is not the sole prerogative of institutions offering traditional doctoral programs in the sciences, because they are not simply ancillary derivatives of such programs. Any institution offering the master’s degree, that has strong faculty in the sciences and in other disciplines essential to a strong PSM program, can mount a successful PSM program.

About a decade ago, the Alfred P. Sloan Foundation began to support the development of PSM programs. It is fair to say that we now have a successful proof of concept. There are today about a hundred such programs in about fifty institutions. As in most new developmental enterprises, they vary considerably in their levels of success. Some are wildly successful, many are very promising, and some have failed. But the results to date support the conclusion that it is time to take the PSM movement to scale and to make it a ubiquitous feature of American graduate education. Part of the basis for that conclusion is supported by the current deluge of reports, media attention, and legislative proposals focused on signs of our nation’s possible loss of leadership in the global high tech economic competition. In one way or another, that attention tends to focus on the need for improved education of Americans in science, technology, engineering, and mathematics (STEM). PSM programs are certainly not the whole solution to that problem, but they are certainly a very promising partial response to that problem, and they have been explicitly recognized as such in the current debate, including in proposed legislation.

In response to this situation the Sloan Foundation has funded a major effort by the Council of Graduate Schools to foster and promote the spread of PSM programs. It is well understood that this will require strong efforts across the full spectrum of American graduate institutions. It will require grass-roots faculty initiatives and advocacy, and institution-level leadership. As has been noted by one of my colleagues here, this movement is not for the faint of heart. Changing entrenched attitudes and practices in academe always requires courage, fortitude, and persistence. But what is at stake here is nothing less than the competitive capabilities of our nation, as well as the competitive positions of our institutions. I urge you all to get with the program and to get on with it in your institutions. You can find help and support in CGS.

Starting a Professional Science Master's Degree It's not for the faint of heart!

Linda D. Strausbaugh
Professor of Genetics & Genomics
Co-Director, University-wide PSM Programs
Director, Applied Genomics PSM
Director, Center for Applied Genetics and
Technology
Department of Molecular and Cell Biology
The University of Connecticut
Storrs, CT 06269-2131
Linda.Strausbaugh@uconn.edu

Abstract

Professional Science Master's (PSM) degrees are destination degrees designed to transport positive elements and philosophies from professional master's degrees in engineering and business to fields in liberal arts and sciences. They are intended to grow the pool of science-trained professionals and improve national competitiveness. PSM degree programs have proliferated in recent years, and potential advantages to educational institutions, students and society have been widely discussed. The road to successfully establishing, sustaining and nurturing PSM programs may be a long one that requires ongoing commitments from all stakeholders. In this report, we share lessons learned from the University of Connecticut's PSM in Applied Genomics.

Introduction

Many colleges and universities view the Professional Science Master's Degree as an attractive initiative. PSM programs provide innovative career options for graduates, an avenue for increased roles for academia in economic development, and an opportunity to build bridges between faculty and corporate and government sectors. Many institutions are also compelled by the potential for the unique and entrepreneurial nature of the degrees to serve as a source of new students and revenue. While such benefits are certainly a part of the PSM program ideals, crafting and implementing a new PSM program is neither an easy nor short term undertaking. This report shares lessons learned from the University of Connecticut's Applied Genomics PSM program.

The PSM in Applied Genomics produces science-trained professionals with

interdisciplinary competency in genetics, genomics, molecular biology and computational analysis. The target clientele are baccalaureate students with degrees in biology or other appropriately related fields who wish to pursue careers in the biotechnology or pharmaceutical industries, forensic genetics, or other genomics-related companies or public service. Such students may be recent graduates, or non-traditional students who want to update training for new career opportunities or advancement with current employers. The degree is a two-year (four-semester) program, with options for part-time completion. Our program has its foundations in partnerships forged between the academic (more than a dozen faculty members), governmental (the Connecticut State Forensic Sciences Laboratory), and corporate (more than ten industrial partners) sectors. The Applied Genomics degree combines elements of a traditional coursework M.S. (with its emphasis on discipline competency through formal, theoretical coursework) and the traditional thesis M.S. (with its emphasis on hands-on research, teamwork, and presentation skills). The PSM also requires substantial cross-training elements for successful performance in the business/corporate/government environment, including a full-time, three month internship.

Identify Workforce Needs, Partners, and the True-Believers

One of the primary goals of the national PSM initiative is to increase the pool of science-trained professionals and thereby enhance workforce development and improve national competitiveness. The first task in starting a new PSM program is to identify the local or regional workforce demands to be met by your educational initiative. Workforce needs can be assessed by a number of methods. In most cases, the relevant economic development and employment agencies will already have conducted national, state, regional and local surveys to identify areas of current and projected unmet need. We supplemented this information with our own survey of local business and industry leaders to both introduce the PSM to potential employers and to gain input on desirable skill sets and specific employment projections. It is especially important to gauge employment prospects since the responsible program carries an obligation to meet reasonable expectations of end of program employment.

In parallel with the identification of workforce needs, proponents of a new PSM need to find the correct corporate, government and trade association partners. Interested business and industry leaders may be invited to form an industrial advisory board; this group will be especially valuable in the early programmatic stages of formulation of curriculum. The biosciences cluster organization Connecticut United for Research Excellence (CURE), the Connecticut State Forensic Sciences Laboratory (CSFSL), and the Connecticut Business and Industry Association (CBIA) were valuable sources of information for the Applied Genomics PSM. The Director of the CSFSL DNA Unit, Dr. Carl Ladd, has been an adjunct instructor and a driving force in suggesting the development of new courses. The CBIA's Director of Workforce Development, Judith Resnick, provided an ongoing line of communication with potential employers and lecturers. Another rich source of contacts in our case was the university's

faculty cohort already involved in collaborative research with industry partners. In our experience, non-academic partners made important contributions to curriculum development and have been highly enthusiastic and qualified adjunct instructors.

One of the greatest challenges is to identify (or create!) true-believers within the institution. New programs need one or two advocates to expend the time and effort to carry out an educational campaign within the institution. The concept of PSM degrees is a new one and will represent unknown territory to many, if not most, faculty and administrators. Moreover, PSM proposals in science and mathematics in doctorate granting departments are likely to encounter resistance in that MS degrees may be viewed as consolation prizes for “failed” PhD candidates. It is critical that a set of faculty who are committed to the PSM program be identified early on. In the case of the Applied Genomics degree, one of the incentives to participate is that the best students will conduct research for several semesters in a faculty lab; in our experience these have been highly productive for the faculty sponsors. A second incentive is the influx of new students with unique (and often mature) perspectives into existing graduate courses; again, our experience has been that PSM students are often among the best and most interactive graduate students in the classroom. The Applied Genomics PSM has uncovered a pool of surprisingly well qualified and talented applicants who are searching for exactly this type of graduate program.

Successful PSM programs are best accomplished by building support at a variety of administrative levels. The foundational person in launching a new PSM is the program director who will be required to contribute considerable time to the project over several years and in a wide variety of capacities. In the PSM in Applied Genomics, this is a full-time, tenured faculty member, although a number of different models exist for other programs. It is also important to have the full support of the lead department’s head since the chair typically has oversight for course scheduling, service/committee assignments, and release time. In our case, Molecular and Cell Biology’s Dr. Philip Yeagle was an early and enthusiastic proponent. Involvement of the graduate school facilitates the approval process through the institutional and state processes. We were especially fortunate that UConn’s Associate Dean of the Graduate School, Dr. James Henkel, was Co-P.I. on the Sloan Foundation multi-track PSM grant, has been a knowledgeable partner from the onset, and currently serves as co-director of all University-wide PSM degree programs. Although entrepreneurial master’s degrees do not have a history in colleges of liberal arts and sciences, UConn’s CLAS Dean Ross Mackinnon was a visionary who recognized the potential of PSMs and embraced the innovative program. Support from each of the administrative levels was instrumental in securing approval and revenue sharing agreements with the Provost’s Office.

Show Me the Money

Institutions of higher education need to prime the pump to jumpstart new PSM programs – the initial support of the Sloan Foundation was critical to initiating

many of the currently successful PSMs. It will also fall upon the universities and colleges to craft arrangements that guarantee growth and sustainability. One of the most important factors in the success of the Applied Genomics PSM is a generous revenue sharing agreement. As a result of established policy for entrepreneurial programs, the University returns major portions of the academic year and summer tuition to the PSM program. This financial arrangement makes it possible for the program to hire a part-time program assistant, to provide summer/intersession compensation for instructors, adjuncts, directors, and graduate teaching assistants. It also funds a seminar program and the development of new courses and programmatic materials.

Start with What You Do Well

It is almost essential to build PSM programs on existing strengths; it is not practical to craft a curriculum with a majority of new courses. Much of the discipline-specific coursework for the degree should already exist as routinely offered courses, thereby helping the PSM program meet its obligation to offer sufficient numbers of courses on a regular basis to allow timely completion. Such a strategy also allows the new PSM program to build upon existing department faculty and resources. This, in turn, permits expansion efforts to concentrate on value-added cross-training and other elements unique to the PSM that better prepare its graduates to assume careers. The strategy we have adopted with the Applied Genomics PSM is to provide core discipline-specific education combined with value-added training for flexible employment endpoints: forensic DNA typing scientists; bench scientists/laboratory managers in genomics and pharmaceutical industries; patent examiners and attorneys; data/clinical trial managers; biotechnology/pharmaceutical drug manufacturing.

The PSM in Applied Genomics is a hybrid between coursework and thesis degrees. It requires a minimum of 33 credits of coursework, selected from an approved menu. Conceptual courses must total at least 18 credits, a requirement that includes many of the same courses that doctoral students will take. An additional minimum of 8 credits must come from “hands-on” and team-oriented practical coursework that can take the form of laboratory research or methodology workshops and modules. A minimum of 7 credits is required in professional science. Our program started modestly and expanded after programmatic elements such as specialty courses and internships were sufficiently established to accommodate larger numbers of students. Because of the extensive hands-on laboratory training, the Applied Genomics PSM will likely remain relatively modest in size compared to some other types of PSM degrees. The Applied Genomics PSM pilot and approved program has graduated 22 students with 100% employment in first choice positions of graduates.

Think Outside the Box

The innovative nature of the PSM provides an opportunity to explore creative approaches to graduate education. Through the Applied Genomics degree

program we have employed several novel strategies, most of which have had impact beyond the PSM program. One lesson we have learned is that what is good practice for the PSM is good practice for graduate education in general.

In the professional master's cohort courses developed specifically for the PSM we have found models for collaborative education and have developed content that is attractive to a broad spectrum of students. The "Frontiers in Applied Genomics" seminar series focuses on genomics and society. It brings diverse practitioners from FBI agents to chief scientific officers of companies to campus, both to learn about the Applied Genomics degree and to interact with our PSM students. An unexpected use of the "Frontiers" public seminars has been their incorporation into undergraduate honors enrichment activities. Courses in communication skills and the responsible conduct of research (RCR) in academia and industry have attracted doctoral students to fill excess capacity seats. The RCR course, which originated from the PSM program, will be used as a framework for similar offerings based in different departments. In partnership with the Connecticut State Forensic Science Laboratory, courses have been designed and offered in DNA fingerprinting and civil liberties (taught by a former Assistant US Prosecutor) and in population and forensic statistics (taught by an international expert visiting the crime lab). In partnership with the Connecticut Business and Industry Association and scientists from the corporate sector, we have designed and offered courses on insights into the biotechnology industry, regulatory issues in the biotechnology and pharmaceutical industries, and quality control and quality assurance in biotechnology and pharmaceutical manufacturing. It has been our experience that colleagues external to the University have been enthusiastic lecturers and provides a perspective and practical knowledge base that students in traditional science programs rarely, if ever, experience. However, such collaborative courses require levels of conceptual and logistical planning and coordination beyond standard courses.

Executive format courses are a staple of many professional degree programs in business. Adoption of this format for selective courses is another innovation that has revolutionized our thinking about traditionally delivered graduate courses. One of the key participants in the Applied Genomics program, Dr. Rachel O'Neill, conducted a trial in which she modified her course Laboratory Techniques in Functional Genomics to an executive format. She converted the laboratory to a series of one weekend, executive format modules each of which was devoted to a single experimental methodology or analytical platform. A typical module begins on Friday afternoon with introductory lectures and initial experimental procedures. Students spend a full day on Saturday engaged in hands-on experimentation interspersed with lectures on theory and practical applications. Participants spend a partial day on Sunday conducting computational and bioinformatics analysis of the results. We have found this to be a far superior format – the uninterrupted sequence from data collection to analysis more accurately reflects research activities than does the artificially constructed weekly laboratory period. Students benefit from the format in that they choose those modules that best match interests. Departments accrue the benefits of additional

seats for a popular course – instead of a total of 16 students being served (16 seats for a single 3 credit course); there are now a total of 96 seats (16 seats for as many as six one-credit modules in a semester). Moreover, the PSM program has been able to help the Department expand its offerings by funding the development of new modules and offsetting the high costs of reagents for laboratory exercises in modern genomics methods. In our experience, it is much easier to secure faculty participation to teach a single module in areas of expertise than to commit to a full course. Professor O'Neill has permanently adopted the modular format for her course, and we are in the process of launching a second modular course.

Given that the Applied Genomics PSM is a hybrid between coursework and thesis degrees, we were presented with an opportunity to rethink the nature of the exit evaluation (thesis or standard question/essay exam, respectively, in traditional degree programs). Our goal was to provide students with another opportunity for professional writing and demonstration of discipline competency, as well as to relate the capstone experience to career aspirations. As a result, the Applied Genomics exit exam format is flexible, at the discretion of the students' individual major advisor and advisory committee and includes several options. Students may write a scholarly review in preparation for future jobs – as examples, a student interested in the practice of law prepared a review of the patent issues surrounding stem cells; another student employed in an instrumentation company wrote a review of platforms and methods for genotyping. Several students have written draft journal articles based upon research conducted either in the program or as part of an internship (providing the work is not proprietary). A number of exit exams have resulted in publications for the PSM students and their research mentors. In one case, a PSM student wrote and presented a technical report on her internship activities to the sponsoring company.

Most PSM programs require internship and placement activities that have not been formal parts of science and mathematics degree programs. Program leaders can expect to expend significant effort to establish the external relationships that support internship and placement activities. Because the PSM degree is as new to potential employers as it is to academia, a good deal of personal contact is required. In the early stages of program planning and implementation, advisory board members, adjunct faculty and visiting seminar speakers are contacts for future placements. Trade organizations and public employment agencies maintain websites with job postings, as do most corporations – we maintain links to sites for resume preparation, employment databases, and human resources on student sections of our website. Many companies also use reputable scientific placement agencies to fill openings – when these agreements include provisions for temporary to permanent placements, such agencies can be helpful for internships as well as employment. We are currently conducting a pilot project in which we include contacting a regional scientific placement agency as another option for our students during their job search phases.

Although considerable effort will be required initially to establish internship and placement activities, the good news is that this diminishes as a program matures. As employers became familiar with the quality of our graduates as interns and employees, they returned to us with requests for applicants when positions open. Moreover, program graduates who are now employees are routinely aware of position openings and often have incentives for recruitment of qualified applicants; they become part of the network for new graduates. As word spread to new potential employers, increasing numbers of inquiries and job announcements came to us. In recent times we have tended to have more opportunities for employment than graduates to respond – one of our most recent graduates had five interviews that resulted in three offers.

Concluding Remarks

The Professional Science Master's is a promising, but still relatively unknown, new degree. It offers many potential benefits to institutions of higher education, students and employers. The degree provides a concrete avenue for integrating advanced studies in liberal arts and sciences into economic development and improved national competitiveness. While these are compelling advantages, and success is rewarding in many ways, it is important for proponents to be aware of the challenges in both starting and maintaining a successful program, and to have full commitments for what may be a lengthy process. However, the challenges in establishing the first program at an institution are the most daunting. It is considerably easier to create additional degrees by sharing courses and building upon infrastructure and experience.

MAGS Committee Reports

Auditing Committee Report

We reviewed the statements of assets, income and distribution, including the state of investments of the Midwest Association of Graduate Schools for the period covering January 1, 2005 to April 11, 2006. In our opinion, the financial statements present fairly, in all material respects, the financial position of the Midwest Association of Graduate Schools as of April 11, 2006.

Committee Members

Dennis L. Nunes, Chair, St. Cloud State University
Philip Pope, Purdue University
Piter Diffley, University of Notre Dame

Distinguished Master's Thesis Award Committee Report

On behalf of the Distinguished Master's Thesis Award Committee, I am pleased to present the report of the 2006 committee selection process.

For the 2006 award, there were 47 nominated theses. The theses were sent to the eight members of the selection committee for review at their respective institutions; manuscripts received multiple reviews. The quality of the manuscripts nominated was excellent; many received very high reviewer scores with comments that indicated high-quality work on the part of the students nominated.

In March 2006, committee members discussed the reviewers' scores and comments for the highest rated manuscripts and selected the following recipients for the 2006 UMI/MAGS Distinguished Thesis Award and for the ParamGun Sood Distinguished Thesis award:

MAGS /UMI Distinguished Master's Thesis Awards

Jamie Kay Bennett, *The Impact of Cognitive Functioning on Mental Health in Community-Dwelling Older Adults*
Iowa State University
MS Human Development & Family Studies, May 2005

Abstract

The purpose of this study was to examine the gray area between intact cognitive functioning and mild cognitive impairment among sexagenarians, octogenarians, and centenarians. Gender, race, and age group differences, as well as changes over time in cognitive functioning were assessed. The impact of cognitive functioning and instrumental activities of daily living on depression, positive affect, and negative affect was also examined. Data were analyzed from the Georgia Centenarian Study, which comprised of three hundred twenty-one participants at Time 1 (T1) and two hundred one participants at Time 2 (T2). All participants were cognitively intact and community dwelling at T1.

Results concerning gender differences indicated women had higher cognitive functioning at T1, but there was no gender difference at T2. Race and age group differences were found at T1 and T2 with Blacks and centenarians having significantly lower cognitive functioning compared to Whites, sexagenarians, and octogenarians. Race differences persisted after controlling for education and self-reported health. The longitudinal analysis indicated mean cognitive functioning scores were significantly lower at T2. Centenarians experienced a steeper decline in cognitive functioning over a shorter period of time compared to the combined group of sexagenarians and octogenarians. The results of

the cross-sectional predictors of mental health indicated self-reported health was a significant predictor of depression, positive affect, and negative affect. Cognitive functioning was not a significant predictor of the three areas of mental health, and instrumental activities of daily living were only a significant predictor of depression. In the longitudinal analysis, cognitive functioning at T1 and functional health at T1 did not predict depression at T2.

Joshua P. Der, "Molecular Phylogenetics and Classification of Santalaceae"
Southern Illinois University - Carbondale
MS Plant Biology, August 2005

Abstract

Santalaceae are a diverse group of root and stem hemiparasitic plants in the sandalwood order (Santalales), which occur worldwide in both tropical and temperate climates. As traditionally classified, 35 genera in four tribes (Amphorogyneae, Santaleae, Anthoboleae and Thesieae) are included in Santalaceae. This family is paraphyletic with respect to Viscaceae (seven genera) and Eremolepidaceae (three genera) and was expanded to include these taxa in the recent APGII classification (Santalaceae sensu lato). Phylogenetic analyses were performed using DNA sequence data from three genes (nuclear small-subunit ribosomal DNA and chloroplast *rbcl* and *matK*) and nearly complete generic-level sampling was achieved (44 of 45 total genera). Sequence data for each gene were analyzed separately and combined using maximum parsimony, maximum likelihood and Bayesian inference. Phylogenies inferred from separate gene partitions are largely congruent, but differ in their level of resolution. Eight distinct and highly supported clades are recovered in combined three-gene analyses. A revised classification based on this phylogeny is proposed which recognizes these eight clades at the family level. Viscaceae is monophyletic and is retained unchanged from earlier classifications. Generic circumscription within tribe Amphorogyneae also remains intact, but its taxonomic rank is raised to family. *Anthobolus* (tribe Anthoboleae) is excluded from Santalaceae sensu lato and allied with Opiliaceae (outgroup). The remaining two genera in tribe Anthoboleae (*Exocarpos* and *Omphacomeria*) are well supported as sister to some members of a polyphyletic tribe Santaleae + Eremolepidaceae. This clade, which contains the type species of Santalaceae (*Santalum album*), is recognized here as Santalaceae sensu stricto and includes all three genera of Eremolepidaceae, *Exocarpos* and *Omphacomeria*, and six genera from tribe Santaleae. Three distinct clades (Nanodeaceae, Pyralariaceae, and Comandraceae) are segregated from the polyphyletic tribe Santaleae and *Buckleya* and *Kunkeliella* are members of Thesieae. *Arjona* and *Quinchamalium* (Thesieae) form the eighth well-supported clade and are recognized as Arjonaceae.

ParamGun Sood Thesis Award

Michael David Nichols, "Malleable Māra: The Transformations of a Buddhist Symbol of Evil"
Miami University
MA, Comparative Religion, August 2004

Abstract

Previous literature has shown that factors within the domains of demographics, personal characteristics and the work environment are related to burnout in social service work. The purpose of this study is to determine what factors within these categories are related to burnout. This study includes a conceptual model consisting of measures derived from a proposed burnout theory.

Bivariate and multivariate analysis of data collected from 170 social service workers in Missouri finds support that factors from two of these domains are indeed related to feelings of burnout. Workers who show high levels of uncertainty about the future, low levels of professional self-esteem and low mastery are more likely to suffer from burnout while workers who have positive experiences with their coworkers, flexibility in their job, adequate promotion opportunities as well as low levels of unnecessary paperwork are less likely to report high levels of burnout.

Committee Members

Eleanor Buczala, University of Cincinnati
Maria Di Stefano, Truman State University
Peggy Harrel, University of Southern Indiana
John Karkheck, Marquette University
Mary Kite, Ball State University
Cynthia Prosen, Northern Michigan University
Steven Sarratore, Indiana University-Purdue University Fort Wayne
David Wilson, Southern Illinois University-Carbondale
Paul Wolf, Air Force Institute of Technology

Membership Committee Report

The Membership Committee received an inquiry about MAGS and provided MAGS membership information to two institutions during the past year. Valparaiso University (David L. Rowland, Ph.D., Dean) and The Chicago School of Professional Psychology (Susan Sances, Vice President of Academic Affairs) requested materials and submitted applications. The Membership Committee reviewed the applications and recommended membership to the Executive Committee.

The Membership Committee for the past year was composed of Dr. Edie Raleigh, Madonna University (Chair), Dr. Marilyn Vogler, Michigan Technological University, Dr. Thomas Atkinson, Purdue University, and Claire Rammel, Oakland University. The Committee members look forward to continuing to serve MAGS in the development of membership over the coming year.

Respectfully submitted,

Edie Raleigh
MAGS Membership Committee Chair

Committee Members

Thomas Atkinson, Purdue University
Claire Rammel, Oakland University
Edith Raleigh, Madonna University
Marilyn Vogler, Michigan Technological University

2006 MAGS Member Institutions

Illinois

Bradley University
Chicago State University
Concordia University
DePaul University
Eastern Illinois University
Illinois Institute of Technology
Illinois State University
Institute for Clinical Social Work
Keller Graduate School of Management
Loyola University of Chicago/Loyola Medical Center
National-Louis University
Northeastern Illinois University
Northern Illinois University
Northwestern University
Roosevelt University
Rush University
Southern Illinois University at Carbondale
Southern Illinois University at Edwardsville
The University of Chicago
University of Illinois at Chicago
University of Illinois at Springfield
University of Illinois at Urbana-Champaign
Western Illinois University

Indiana

Anderson University
Ball State University
Butler University
Indiana State University
Indiana University
Indiana University Purdue University Indianapolis
Indiana University Purdue University Fort Wayne
Oakland City University
Purdue University
Rose-Hulman Institute of Technology
University of Indianapolis
University of Notre Dame
University of Saint Francis
University of Southern Indiana

Iowa

Iowa State University
Maharishi University of Management
University of Iowa
University of Northern Iowa

Kansas

Baker University
Emporia State University
Fort Hays State University
Kansas State University
MidAmerica Nazarene University
Newman University
Pittsburg State University
University of Kansas
University of Kansas Medical Center
Wichita State University

Kentucky

Northern Kentucky University
Southern Baptist Theological Seminary
University of Kentucky

Michigan

Andrews University
Calvin College
Central Michigan University
Davenport University
Eastern Michigan University
Grand Valley State University
Kettering University
Madonna University
Michigan State University
Michigan Technological University
Northern Michigan University
Oakland University
University of Michigan
Walsh College of Accountancy and Business
Wayne State University
Western Michigan University

Minnesota

Bemidji State University
College of St. Scholastica
Minnesota State University, Mankato
Mayo Graduate School
St. Cloud State University
Saint Mary's University
University of Minnesota Twin Cities
Walden University
Winona State University

Mississippi

Mississippi State University

Missouri

Central Missouri State University
Drury University
Northwest Missouri State University
Rockhurst University
Saint Louis University
Southeast Missouri State University
Missouri State University
Truman State University
University of Missouri - Columbia
University of Missouri - Kansas City
University of Missouri - St. Louis
University of Missouri - Rolla
Washington University in St. Louis
Webster University

Nebraska

Chadron State College
Creighton University
Peru State College
University of Nebraska - Lincoln
University of Nebraska at Omaha
University of Nebraska Medical Center
University of Nebraska at Kearney

North Dakota

Minot State University
North Dakota State University
University of North Dakota

Ohio

Air Force Institute of Technology
Ashland University
Bowling Green State University
Case Western Reserve University
Cleveland State University
Hebrew Union College - Jewish Institute of Religion
John Carroll University
Kent State University
Medical College of Ohio
Miami University
Ohio University
Notre Dame College of Ohio

The Ohio State University
University of Akron
University of Cincinnati
University of Dayton
University of Toledo
Ursuline College
Wright State University
Xavier University
Youngstown State University

Oklahoma

Cameron University
Oklahoma State University
Southeastern Oklahoma State University
Southwestern Oklahoma State University
University of Central Oklahoma
University of Oklahoma
University of Oklahoma Health Sciences Center
University of Tulsa

South Dakota

Northern State University
South Dakota School of Mines
South Dakota State University
University of South Dakota

Texas

Texas Tech University

Wisconsin

Concordia University
Marquette University
Sacred Heart School of Theology
University of Wisconsin - Madison
University of Wisconsin - Eau Claire
University of Wisconsin - Green Bay
University of Wisconsin - La Crosse
University of Wisconsin - Milwaukee
University of Wisconsin - Oshkosh
University of Wisconsin - Platteville
University of Wisconsin - River Falls
University of Wisconsin - Stevens Point
University of Wisconsin - Stout
University of Wisconsin - Superior
University of Wisconsin - Whitewater

Publication Committee Report

The Publication Committee published the Proceedings of the 61st Annual Midwestern Association of Graduate Schools Meeting based on presentations from the conference held March 29 through April 1, 2005, in Kansas City, Missouri. The Proceedings were printed by Paap Printing of Charleston, IL at a cost of \$1,250 for 275 copies. The 2005 Proceedings volume was mailed to all attendees of the 2005 meeting as well as to the dean of each member institution. An archival copy was sent to the Council of Graduate Schools office in Washington, DC, and copies were distributed to attendees of the 2006 meeting in Chicago. Plans are currently in place to publish the Proceedings of the 62nd Annual Meeting held in Chicago, IL.

Respectfully submitted,
Robert Augustine, Chair
Dean of the Graduate School
Eastern Illinois University

Committee Members

Robert Augustine, Eastern Illinois University
Karen Carney, University of Illinois Urbana-Champaign
Frank Einhellig, Southwest Missouri State University

Treasurer's Report FY 2005-2006
Period Covered - 03/31/05 to 04/11/06

ASSETS

Checking Account (3/31/05) 52,092.41

REVENUE (3/31/05 to 04/11/06)

Dues for 2005-06 14,700.00
Conference Fees for 2006 Meeting 15,060.00
Refreshment Contribution for 2006 Meeting 3,600.00
Exhibitor Fee 2,000.00
Other Deposits (donations, etc.) 1,750.00
Subtotal 89,202.41

DISBURSEMENTS/EXPENSES (3/31/05 to 04/11/06)

Conference in Kansas City 26,241.26
Summer Conference Planning Meeting 112.49
Chicago Conference Deposit 5,000.00
Additional Expenses (proceeding, brochures, etc.) 3,223.89
Subtotal 36,655.67

REVENUE LESS EXPENSES 52,546.74

CHECKING ACCOUNT BALANCE (04/11/06) 52,929.18

INVESTMENT ACCOUNT

\$20,000 + \$1,505.39
7-year investment balance as of 4/11/06 21,505.39
\$10,000 + \$470.00
Reinvestment for 17 months at 3.75% as of 4/11/06 10,470.10
Investment Balance 31,975.49

TOTAL CURRENT ASSETS (04/11/06) 84,904.67

Patrick Melia
Secretary/Treasurer
April 12, 2006

Instructions to Contributors to the Proceedings of the Midwestern Association of Graduate Schools

Proceedings Editor

Robert M. Augustine, Ph.D.
Dean of the Graduate School
The Graduate School
Eastern Illinois University
Charleston, IL 61920
Phone: 217-581-2220
Fax: 217-581-6020
Email: rmaugustine@eiu.edu

Adherence to the submission schedule and instructions on how to submit your manuscript is essential to the timely publication and distribution of the Proceedings of the Midwestern Association of Graduate Schools. In addition, continuity in style and form are central to the appearance of any publication of articles. These guidelines have been developed to help achieve the goal of consistency and yet allow for freedom and presentation for the array of topics that constitutes the Proceedings.

The Proceedings of the Midwestern Association of Graduate Schools contains the text of presentations at the annual meeting, MAGS committee reports, summaries of small-group discussions, and other items of concern as appropriate to support the goals of the organization. Authors should be aware that the text of oral presentations may need some modifications for clear communication as a publication in the proceedings. They should revise the presentation to make it suitable for publication. The Proceedings does not act as a general publication outlet nor does it accept unsolicited manuscripts.

How to Submit Your Manuscript

Submission. Presenters, Workshop Facilitators, and Committee Chairs preparing annual reports should provide materials for publication to the member of the Publications Committee who requests the manuscript. Guidelines for panel facilitators are provided as the last section of these instructions to contributors.

Format. All manuscripts must be submitted electronically in Microsoft Word format (.doc) or rich text format (.rtf). PowerPoint or similar presentations are not acceptable.

Review of the manuscripts. The Publications Committee assumes responsibility for editing *Proceedings* manuscripts.

Time Table. Publications Committee members will specify a deadline for manuscripts. Generally manuscripts and reports should be received by the Publications Committee member no later than **60 days** following the annual meeting.

Manuscript Preparation. Presenters, Workshop Facilitators, and Committee Chairs preparing annual reports are urged to review a recent edition of the *MAGS Proceedings* as a guide for preparing their manuscripts. Copies are mailed to all association members. The general guidelines are as follows:

Title	Use the title published in the meeting schedule, typically 10 or fewer words.
Authorship	Provide your name, title, institution, address, and email address.
Abstract	The first section should be an abstract of no more than 100 words.
Line spacing	Single space.
Paragraphs	Double space between paragraphs; do not indent.
Headings	Use of headings is encouraged, but should not exceed two levels. Left justify headings and bold.
References/citations	<i>Chicago Manual of Style</i> documentation style. Your references must be complete; if not, you will be contacted to provide the missing information. The editor cannot complete your references or verify them for accuracy.
Length	Ten single-spaced pages is the maximum length anticipated.
Figures/artwork	Graphs/figures developed using Microsoft Office are acceptable. Otherwise, provide clean, camera-ready copies that can be photocopied directly into the <i>Proceedings</i> .

Workshop Facilitators

The following guidelines apply to interactive meeting sections that are under the direction of a workshop facilitator, who is responsible for formulating key questions for discussion, moderating the discussion session, and providing a written summary for the *Proceedings*. After the title and authorship (facilitator), the manuscript presented to the *Proceedings* should start with a statement of the topic and a bulleted list of four to six questions that served as the focus of the discussion. These elements should be followed by a concise summary (250-500 words) inclusive of the salient points, comments, or questions that arose during the group discussion. If desired, references can be included in a standard reference list according to the format specified for other manuscripts in the *Proceedings*.

