

# **Report of Committee on Graduate Education**

# **Part I-Financial and Internal Process Considerations**

# **Members**\*:

Vice Provost & Interim Dean C. Anderson
Dean D. Andrews
Dean R. Brueggemeier
Ms. J. Carpenter-Hubin
Ms. L. Flesch
Dean R. Freeman (Chair)
Dean J. Herbers
Ms. M. Mead
Dean F. Sanfilippo

Before submitting this report in final form, the Chair presented, at the request of the Provost, a draft version to the Senate Fiscal Committee for their consideration. The Senate Fiscal Committee advised the Provost on the applicability and practicality of the financial recommendations contained in the draft version of this report. The Provost sent the advice of the Senate Fiscal to this Committee, along with a request to address the Senate Fiscal Committee concerns in the Final Report. This final report acknowledges the feedback from Senate Fiscal.

1

<sup>\*</sup> Dean Donna Evans was a member of this committee through June 30, 2005.

## **Executive Summary**

This Interim Report II addresses parts 1, 3, and 5 of our committee's charge, and focuses on fiscal support of quality Doctoral education. We find:

- OSU lags behind our peers in production of Ph.D. graduates, and there has been a decline in Ph.D. production over the last ten years, during the same time enrollment in master's programs has surged<sup>†</sup>. Yet even with this increase in master's programs, OSU lags our peers in Master degree production as well.
- 2. To date, the University has used the Board of Regents funding formula for State Share of Instruction (SSI) and has passed the resources on to units simply as earned by a credit hour formula that is based solely upon enrollment. For graduate education, this behavior has generated a number of unintended consequences, and is inconsistent with the broad intentions of the full implementation of Budget Restructuring.
- 3. The lack of central control over both individual Doctoral program quality and the numbers (and quality) of graduate students enrolled in the University have likewise generated unintended consequences
- 4. Graduate School data on GRE scores, GPA scores, and graduation rates show that Doctoral programs at Ohio State vary <u>substantially</u> in their quality, and it is clear there is not a valid institutional basis for this wide variability.
- 5. There is a surprisingly large resource base for Doctoral graduate programs that is currently not being administered in a manner consistent with the Academic Plan or the intentions of the Budget Restructuring Model.

We conclude, and Senate Fiscal agrees, that the fiscal model supporting Doctoral education requires a dramatic overhaul; such an overhaul must be careful to disentangle Masters from Doctoral programs, be sensitive to difference in how graduate students are trained across disciplines, and be predicated on sound financial analysis.

#### Our short-term recommendations include:

- 1. eliminate the requirement for Doctoral students to enroll for credits in summer quarter (unless required by an assistantship);
- 2. eliminate the requirement that Doctoral students enroll for more than a minimal number of credits, especially in 999 courses;
- 3. clearly identify terminal Masters programs, tagged Masters programs, and those that serve as stepping-stones to Doctoral programs;
- 4. give the Graduate School absolute authority over admission of Doctoral students to the University, assuring optimization of the process of matriculating the most qualified Doctoral students

### Longer-term recommendations include:

- 1. initiate systematic, regular, comprehensive program reviews on 3-6 year cycles;
- 2. develop a funding model based on quality and graduation success rather than credit hours-this model should include use of BoR Doctoral subsidy for Doctoral education only;
- 3. rigorously review the processes associated with the current Graduate School funding of fee authorizations (\$7.6M) and fellowship, stipends and fee waivers (\$6M) to establish

<sup>&</sup>lt;sup>†</sup> N.B.: Our report covers all Ph.D. programs the Pharm. D., the D. Aud. and all master's programs with the exception of the M.B.A. and M.Ed. All other professional doctorates are excluded (M.D., DVM, DDS, D.O., J.D.). Note that PharmD is currently in doctoral subsidy per BOR, but will be removed per BOR in FY07

- mechanisms that advance the goal of supporting the highest quality Doctoral Programs and students
- 4. students who are admitted to a MS degree program and wish to continue on to a Doctoral program (e.g. not tagged, nor programs admitting directly to a Doctoral program) must, upon completion of the MS program, re-apply and be reviewed for admission to Doctoral study by the Graduate School.
- 5. study fiscal models for reducing Doctoral tuition at a reasonable point (e.g. after the student passes comprehensive exams);
- 6. after (5) has been implemented, require tuition to be direct-charged on external grants and contracts for all GRA appointments.

### COMMITTEE ON GRADUATE STUDIES REPORT

# Purpose of Issuing the Final Report in Two Sections

The 5 charges given by the Provost to this committee<sup>A</sup> can be parsed into two broad categories: those dealing with examining processes for determining quality indicators of Doctoral graduate programs (2 and 4), and those addressing financial and structural obstacles to maximizing the quality and efficacy of Doctoral graduate education at OSU within current financial conditions (1,3,5).

Studies of quality indicators, including the assessment of the relevance and appropriateness of metrics published in Interim Report I are not complete. This important study is currently involved in the testing of data-driven quality indicators on 14 "test" programs within the University. The conclusions and specific recommendations addressing charges 2 and 4 to the committee are scheduled to be released by September 30, 2005.

There is an additional driver for concentrating upon these charges immediately and issuing a second Interim Report at this time. Subsequent to the publication of the first Interim Report, the Dean of the Graduate School has resigned, and the Provost has appointed a committee ("The Beck Committee") to advise her on the organization, structure and ultimately the functions of the graduate school going forward. In coordination with the charge and function of the Beck Committee, the recommendations for charges 1, 3 and 5 of this committee are being issued at this time to facilitate the work of the Beck Committee.

This committee, in handling charges 1, 3, and 5 has adhered to the outlines of its goals as published in the first Interim Report<sup>C</sup>. The overarching conclusions are:

- The University's performance with respect to Doctoral degrees granted per year is below our expectations and our aspirations, both in quality and quantity.
- <u>INTERNAL</u> structural problems have dramatically acerbated our difficulties in funding Doctoral graduate education. We identify: (a) immediate actions that can relieve significant portions of the financial pressures, buying us time for thoughtful planning; (b) relatively short-term actions that can yield substantial financial gains for graduate education; and (c) longer term reforms that if implemented and monitored by the Graduate School will bring stability to graduate finances and align available graduate resources with the Academic Plan.
- There is no escaping the conclusion that increased funding for Doctoral programs will need to come through quality-driven reallocation of OSU's *existing* resources, as generation of significant new resources for graduate education is highly unlikely.

# **Our Current State**

# A) Graduate student enrollments at Ohio State: MS and Ph.D. recipients in historical and peer contexts

This Committee was formed to examine the funding and viability of Doctoral graduate programs at OSU. What was discovered in the process of examining in detail the financial structures of the Doctoral programs was the intimate connection between Doctoral and Masters program funding. Thus, while this committee does not specifically address the administration and financing of Masters programs, our analysis and recommendations for Doctoral programs necessarily involved understanding at least the basics of the role of Masters programs at OSU.

The Ohio State University graduate programs are both Masters and Ph.D., with very different funding mechanisms from the State. In fact, contrary to common wisdom, the total graduate degrees awarded each year at OSU are <u>dominated</u> by Masters. With few exceptions, this is the case across all units within the University.

Comparisons of MS and PhD Graduates

### 10Yr = 1995-2004 ■10Yr Average MS 700 600 500 400 300 □10Yr Average PhD Number of Graduates 200 100 FAES MAPS Dentistry Pharmacy SBS Social Work Education ngineering **Juman Ecol** Humanities ptometry

Figure 1. Comparisons of MS and Graduate Graduates by unit

Data from the AAU demonstrates that OSU is a significant source of Master's degrees in the country, although over the last 10 years our Masters degree production ranking has slipped.

		OSU Rank
	Total Master's	Among All PhD
	Granted by Ohio	Granting
	State	Institutions
94-95	2353	14
95-96	2265	16
96-97	2547	11
97-98	2345	16
98-99	2364	14
99-00	2310	15
00-01	2340	16
01-02	2457	16
02-03	2515	18
03-04	2606	19

Table 1. Master Degrees granted at OSU by year and OSU's ranking among all Ph.D. Granting Institutions.

There is, however, a significant and growing problem with OSU's absolute number of Ph.D. degrees granted per year, as well as our national ranking in production of Ph.D.s per year.

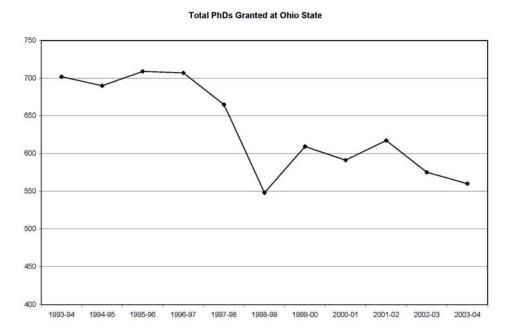


Figure 2. Total Ph.D. Degrees granted at OSU per year 93-94 through 03-04

The number of Ph.D.s granted per year at OSU has been declining over the past ten years, This figure shows the trend of Ph.D.s, including Education Ph.D.s, over the period 1993 through 2004. If the Educational Ph.D.s are removed, the numbers drop for each year by approximately 100; in 2003-2004 OSU granted a total of 482 Ph.D., placing OSU currently 11<sup>th</sup> in the AAU institutions in Ph.D.s granted per year.

Institution	Name	OHIO STATE U	JNIVERSITY-MA	VIN CAMPUS		
						OSU Rank
		OSU Rank	Education	OSU Rank	Total OSU	Among All
	Total PhDs	Among All	PhDs	Among All PhD	PhDs Minus	PhD
	Granted by	PhD Granting	Granted by	Granting	OSU Ed	Granting
	Ohio State	Institutions	Ohio State	Institutions	PhDs	Inst
94-95	699	6	118	4	581	8
95-96	717	5	143	2	574	7
96-97	721	5	97	6	624	5
97-98	636	8	107	7	529	10
98-99	561	10	101	9	460	12
99-00	620	5	108	5	512	8
00-01	620	6	84	11	536	9
01-02	617	4	106	5	511	9
02-03	575	10	96	6	479	11
03-04	560	13	78	10	482	11

Table 2 Ph.D. Degrees granted per year in Comparison to all Ph.D. granting Institutions

Note again that the number of Masters degrees granted at OSU has risen steadily during this same period from 2353 in 94-95 to more than 2600 in 03-04. In many respects, this is a reflection of trends across the country, as the figure below suggests: Many of the country's best educational institutions grant more Masters degrees per year than OSU, and what's more, grant a larger ratio of Masters to Ph.D.s than OSU.

		# of Master's
	# Master's	Granted per PhD
Liet of Institutions Dealerd there Ohio St. L. Conn. o.	Granted In 2003-	Granted in 2003-
List of Institutions Ranked Above Ohio State In 2003-04	04	04
UNIVERSITY OF PHOENIX-ONLINE CAMPUS	6572	121.70
2. WEBSTER UNIVERSITY	5407	386.21
3. NEW YORK UNIVERSITY	5346	13.14
4. COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK	4556	9.20
5. UNIVERSITY OF SOUTHERN CALIFORNIA	3668	6.40
6. NOVA SOUTHEASTERN UNIVERSITY	3585	5.09
7. JOHNS HOPKINS UNIVERSITY	3563	9.84
8. UNIVERSITY OF MICHIGAN-ANN ARBOR	3446	5.22
9. HARVARD UNIVERSITY	3249	5.68
10. GEORGE WASHINGTON UNIVERSITY	3196	12.68
11. BOSTON UNIVERSITY	3046	11.41
12. UNIVERSITY OF FLORIDA	2961	4.27
13. LESLEY UNIVERSITY	2875	479.17
14. THE UNIVERSITY OF TEXAS AT AUSTIN	2841	4.05
15. UNIVERSITY OF PENNSYLVANIA	2794	6.77
16. UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	2756	
17. UNIVERSITY OF MINNESOTA-TWIN CITIES		4.80
	2677	4.52
TO THE TENTE OF TH	2616	7.13
19. THE OHIO STATE UNIVERSITY	2606	4.65

Clearly, some of these institutions have very different missions from ours. But there are twelve AAU institutions that granted more Master's degrees in 2003-04 than did we, and nine of those have higher Master's to PhD ratios than Ohio State.

<u>Table 3 Institutions Ranked above OSU in Number of Masters Degrees Granted/Year and the Ratio of Number of Masters Degrees to Ph.D. Degrees for each Institution (03-04)</u>

Given the above data, what is the problem? The Committee views this overview of Masters vs. Doctoral degrees granted at OSU not in the context of the absolute number of Masters degrees granted per year, nor the increase in this number per year. This appears to be the direction of where much of graduate education in the US is headed, and the committee applauds the various units' recognition and response to this trend. Our concern centers on exactly how the ratio of Masters: PhDs. compares with both our peers and aspirational peers. This ratio, is misleading and when examined, is of little comfort to OSU. If one takes the numbers in Figure 2 and compares it to the ranking in Table 1, one concludes that our low Masters/Ph.D. ratio stems directly from a relatively low production of Ph.D. degrees granted per year. The stark fact is that 482 Ph.D. degrees (exclusive of Education) granted in 2003-04 is far below the number expected from an institution the size and (self-declared) quality of OSU. Further, the 10 year trend data suggests strongly that this problem will get worse, not better. Of further concern, although our ratio of Masters to Doctoral degrees granted is apparently competitive, the quality of our Ph.D. students is probably not competitive with the likes of Harvard, Johns Hopkins, U. of Michigan, or indeed, many of our peers. It is this dual challenge of ultimately increasing the quantity of Ph.D. degrees granted per year simultaneously with increasing the overall quality that forms the basis of this committee's work.

Confronted with these data, the Committee has attempted to address the root cause of this decline in OSU Ph.D. production, as well as the quality of our Ph.D. graduates. Our collective opinion is that OSU has many, (not all), highly qualified Ph.D. programs, and certainly has the quality and number of faculty necessary to have much higher Ph.D. production rates. However, one striking piece of data from the AAU concentrates even the most casual observers mind on where the core problem lies:

	Avg #	Avg # Medical		Tenured & Tenure	# Doctoral	Rank for a
	Doctoral	Doctoral	Avg Non-	Track		
	Degrees,	Degrees,		Faculty,		
Institution Name		2002-2004	Degrees			
UNIVERSITY OF CALIFORNIA-BERKELEY	784	9	775			
UNIVERSITY OF CALIFORNIA-LOS ANGELES	618	7	611	1465		
UNIVERSITY OF WISCONSIN-MADISON*	646	9	637	1557		
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	414	16	398	1044		
UNIVERSITY OF FLORIDA	631	22	609	1622		
THE UNIVERSITY OF TEXAS AT AUSTIN	672	0	672	1840		
UNIVERSITY OF CALIFORNIA-SAN DIEGO	295	5	290	836	0.347	
UNIVERSITY OF MINNESOTA-TWIN CITIES	571	22	549	1669		
UNIVERSITY OF VIRGINIA-MAIN CAMPUS	339	0	339	1031		
UNIVERSITY OF MARYLAND-COLLEGE PARK	443	Ō	443	1370		
UNIVERSITY OF MICHIGAN-ANN ARBOR	630	2	628	1991	0.315	
UNIVERSITY OF WASHINGTON-SEATTLE CAMPUS	483	8	474	1545		i
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	598	Ō	598	2024		
TEXAS A & M UNIVERSITY	487	Ō	487	1660		
UNIVERSITY OF CALIFORNIA-SANTA BARBARA	234	0	234	799		
UNIVERSITY OF ARIZONA	382	ō	382	1303		
PENNSYLVANIA STATE UNIVERSITY-MAIN CAMPUS	520	5	516	1829		
UNIVERSITY OF CALIFORNIA-DAVIS	365	1	364	1302		
INDIANA UNIVERSITY-BLOOMINGTON	379	1	379	1391		
OHIO STATE UNIVERSITY-MAIN CAMPUS	587	6	581	2178	The state of the s	2
UNIVERSITY OF COLORADO AT BOULDER	282	0	282	1108		
UNIVERSITY OF IOWA	290	3	286	1137		
UNIVERSITY OF NEBRASKA AT LINCOLN	234	Ō	234	939		
SUNY AT BUFFALO	266	12	254	1020		
RUTGERS UNIVERSITY-NEW BRUNSWICK	368	0	368	1498		
SUNY AT STONY BROOK	201	32	169	701	0.241	2
PURDUE UNIVERSITY-MAIN CAMPUS	439	17	422	1786		
UNIVERSITY OF MISSOURI-COLUMBIA	259	1	258	1107		
UNIVERSITY OF CALIFORNIA-IRVINE	183	2	182	783		
UNIVERSITY OF KANSAS MAIN CAMPUS	225	0	225	978		
UNIVERSITY OF PITTSBURGH-MAIN CAMPUS	355	32	323	1435		
UNIVERSITY OF OREGON	152	0	152	691	0.220	
MICHIGAN STATE UNIVERSITY	433	1	432	2075		
IOWA STATE UNIVERSITY	242	0	242	-		

Table 4. Ph.D. Degrees per Tenure or Tenure Track Faculty per year for State Institutions 903-04)

Table 4 shows that, on average, each of our tenure-track faculty members graduates only one Ph.D. every four years, landing us in 20<sup>th</sup> place nationally among Public Institutions. These data drive the inescapable conclusion that as a University, we are either not enabling or, perhaps worse, discouraging production of Ph.D. graduates by our faculty. Such behavior is woefully inconsistent with our Academic Plan.

### B) Our Current State: Funding for Doctoral Education at Ohio State

This Interim Report II examines the financial behaviors that, in the unanimous opinion of the committee have and are contributing to disincentives for a higher production rate of Ph.D. graduates per year, as well as the specific <u>internal</u> OSU patterns that work against the improvement in the quality of our Ph.D. programs. The report breaks into two natural parts:

- 1. An overview of the how the resources for Doctoral education are received by OSU, and an examination of how OSU is currently administrating these resources.
- 2. From the results of (1), we propose a series of steps, starting with those that can be implemented immediately and moving through longer term reforms that can yield financial stability to Doctoral education and will result in greatly enhanced (both in quality and quantity) Ph.D. production rates.

# Role of the Board of Regents Funding Formula and its interaction with Budget Restructuring

The bulk of the funding for Doctoral education derives from state support. Few Doctoral students pay tuition directly, and until recently tuition fee waivers were provided routinely for students supported on external funding. We will address tuition charges to grants below, and first concentrate on the largest source of funding for Doctoral education: state subsidy.

The committee has had the opportunity to explore, in depth, the often misunderstood regulations promulgated by the Board of Regents (BoR) concerning the allocation of State Share of Instruction (SSI) for Doctoral programs<sup>‡</sup>. Some of the elements essential for understanding the impact of the BoR regulations concerning the SSI for Doctoral graduate education are:

on OSU, but rather that we "need to fix the BoR rules". The committee has taken the advice of the Senior Vice President for Finance that this path would be quixotic at best and politically destructive to OSU at worst. In any case, the committee did not attempt to analyze the "why" of the BoR regulations, but instead

chose to maximize OSU's use of the funds allotted under these regulations.

<sup>‡</sup> Indeed, one of the frustrations in discussions concerning our financial crisis in graduate education within the OSU community is that there is a common perception that the committee should be concentrating not

- The BoR Doctoral funding model is built upon a 1998 historical "snapshot" of the percentage of Doctoral graduate FTE at OSU in comparison to all Doctoral graduate FTE at all eligible higher educational institutions within Ohio.§
- For the BoR, an FTE is any graduate student who earns 10 credit hours per quarter. Since most graduate students register for more than 10 hours, OSU's headcount of graduate students on campus is significantly lower than our reported FTE to the BoR.
- Historically, the BoR calculated a given year's Doctoral FTE by taking the average of summer and autumn quarter enrollments and multiplying by 2. Currently the BoR takes the total year as actually reported. (As discussed in detail below, this change offers an immediate pro-active opportunity for OSU to boost the effective State Subsidy per credit hour in Doctoral programs.)
- In the BoR formula, all graduate students earn "Masters" subsidy until they accrue 50 credit hours, at which point they earn subsidy per credit hour as Doc-I/II\*\*, until they reach 260 total credit hours. Note that this statement is universal: as soon as students accrue more that 50 credit hours, they draw SSI from the Doctoral pool of money, regardless or whether they are finishing a program for a Terminal Master's degree, or continuing or transferring to a Doctoral program. (No Doctoral SSI is allocated to OSU for any graduate student who has accrued more than 260 graduate credit hours.)<sup>††</sup> This practice confounds program enrollment analysis. Students enrolled in Doctoral programs earn Masters level subsidy for the first 50 hours, then these students all earn Doctoral subsidy for their subsequent 210 credit hours. Terminal or Tagged Masters students whose program requires, or the individual student simply chooses to take, more than 50 credit hours earn SSI as if they were Doctoral students, once they pass the 50-hour mark. The committee notes that it will require some substantial effort to accurately parse the Terminal Masters from the Terminal Doctoral students, for with the exception of Tagged Masters, students are defined within individual programs with program-specific methodologies for differentiating between non-Terminal Masters, and Master degrees required or expected for continuation onto the Ph.D.. (As discussed below, this conflation is at the heart of the financial crisis facing Doctoral education at OSU).

<sup>§</sup>It is important to note that the BoR does NOT differentiate between Doctoral programs at various institutions within Ohio. All of the BoR regulations concerning Doctoral SSI are constructed entirely upon reported numbers of full time FTE's from each institution within the State.

<sup>\*\*</sup> Doctoral II SSI is approximately 1.5 that of Doctoral I. SSI Masters SSI is distributed in three levels with Masters III being approximately 1.5 times Masters I. The assignment of level with subsidy category is determined by the BoR and not under the control of OSU. In recent years, Masters I SSI has represented approximately 60% of Doctoral I SSI; note that unlike the Doctoral SSI total State funding, the Masters SSI is not a fixed pot of money: This important difference is discussed in detail below.

<sup>††</sup> This fact is widely misunderstood as being an OSU Graduate School rule; programs have even requested "exemptions" for this rule. Again, the 260-credit hour rule is a BoR regulation that applies statewide and is not under the control of OSU..

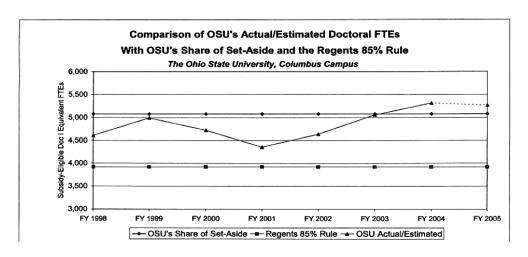


Figure 3 Actual FTE Doctoral FTE Count as Reported to BoR

- OSU's share of the total State-wide Doctoral SSI assigned each biennium by the legislature is fixed at 42.2%, and subject to the boundary discussed below, is independent of the number of FTE reported to the BoR.‡‡
- There is a FLOOR §§ of Doctoral FTE below which OSU will suffer a reduction of SSI. This is the BoR "85%" rule. This amounts to a simple effective requirement: Each year OSU can report at least 3,920 graduate FTE to the BoR, it receives 42.2% of that biennium's total state-wide Doctoral SSI. Thus, while it is possible to receive less than the 42.2% of the state-wide available Doctoral SSI: it is not possible to receive more. If were practical to do so, the University's best strategy to maximize per-capita funding for Doctoral students would be to report a yearly FTE count of exactly 3920 FTE. There appears to be no BoR regulations addressing how Doctoral SSI, once earned according to the above BoR formula, is actually to be spent. That is, it is within OSU's domain to administer these funds to maximize its own initiatives concerning Doctoral education. Thus the University is largely free to assign Doctoral SSI as it chooses, and to set its own policy on graduate credit hours. As is evident from the discussion in the next bullet, there have already been unintended

11

<sup>&</sup>lt;sup>‡‡</sup> 42.2% of the statewide total base Doctoral FTE amount of 12,028 is currently 5,076. The 42.2% is the historical figure reflecting the greater 2 or 5 year average from the period of FY94-FY98. This figure is "frozen", and continues to be the basis of the BoR formula for Doctoral SSI allotted to OSU. This FTE figure can be exceeded without penalty, but crucially, the total SSI money assigned to OSU for Doctoral education from each biennium's total state-wide SSI is based upon not on the 5,076 FTE, but rather upon 42.2% figure of the 1998 State total, regardless of the actual FTE of any given year at OSU.

<sup>§§.</sup> There is no "cap" on the total number of FTE graduate students that can be enrolled on the campus. However, Ohio Revised Code Section 3345.19 sets a University-wide total adjusted student FTE limit of 42,000 for the Columbus Campus to be calculated and monitored the Board of Regents. Currently, OSU has never exceeded this count, although it has apparently has come close within the last few years. The Committee refers the reader to the Office of Business and Finance for more information on how these total FTE numbers are reported to the BoR.

consequences of this "hands-off" BoR stance in how OSU has historically been using Doctoral SSI.

- Currently, far from being at the minimum "floor" of 3,920 FTE required by the BoR to earn this year's 42.2% of the State Doctoral Subsidy, we are currently at a reported FTE count of approximately 5,300 in 2005, reflecting an upward trend over 4 years from a low of approximately 4,400 FTE in 2001 (Figure 3). Since the number of Ph.D.s granted by the University as a whole has been falling (with variation) over the last 10 years, the conclusion is that the increase in FTE in the Doctoral subsidy pool is due to terminal Master's degrees which either require or permit credit hours in excess of 50. (This applies to "tagged" Masters-except for MBA and Education- and to terminal Masters within conventional academic programs). Data from the Graduate School on the number of Masters admissions and graduates vs. the numbers for Ph.D.s confirms this inference.
- Terminal Masters (including Tagged, but excluding MBA and Education) degree programs that either require or permit more than 50 hours effectively take money from the Doctoral subsidy pool in direct proportion to the number of hours each student takes above 50 hours. (A snapshot of the calendar year 04 indicates that over 43,500 credit hours accrued by students in terminal Masters programs were credited with Doctoral SSI. See Table 4) \*\*\*\*
- When the increasing FTE Doctoral count is combined with a decreasing total pool of money allocated by the legislature to the State-wide total Doctoral Subsidy, OSU has suffered an 11% *DROP* in DOC-I/II subsidy per credit hour since FY 2003. (Note bottom two lines in the spread sheet in Table 5.).

# Comparison of OSU's Actual/Estimated Doctoral FTEs With OSU's Share of Set-Aside and the Regents 85% Rule

Ohio State University - Columbus Campus

	TT	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
/	77	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE
OSU's Share of Set-Aside	(2)	5,076	5,076	5,076	5,076	5,076	5,076	5,076	5,076
Regents 85% Rule	(3)	3,920	3,920	3,920	3,920	3,920	3,920	3,920	3,920
OSU Actual/Estimated	(4)	4,612	4,992	4,722	4,354	4,637	5,058	5,314	5,264
		S	ubsidy-Eligik	ole Doctoral	& Il Allocati	on 😘 💮		2 to \$2.7 (VI) 4.	
Subsidy Per Credit Hr - Doc I							\$325	\$307	\$291
Subsidy Per Credit Hr - Doc II							\$488	\$460	\$437

Table 5 Subsidy per Credit Hour for Doctoral Graduate Students (Bottom two rows)

\_

<sup>\*\*\*</sup> If one simply takes the 43,500 credit hours at an average of FY 2005 Doc-I/Doc-II subsidy, this figure represents approximately \$13M movement of Doctoral SSI to Masters SSI. However, the overall net income for BOTH Masters and Doctoral from the state is complicated by the fact that by definition, all Doctoral students in their first 50 credit hours earn Master's SSI. Thus a more global financial analysis would have to calculate the effective net "cross subsidy" between Masters and Doctoral SSI based upon actual program count and actual credit hours accrued program by program.

			Credits		
Degree	Program	Number of Students	Required for Degree	Average Credits at Graduation	Total hour: above 50
<b>Бер ее</b>	T Togram	2 Carolina	10.000		
Master of Accounting	Accounting and Management Information Systems	50	45	94	2,20
Master of Applied Statistics	Statistics	28	50	142	2,57
Master of Architecture	Architecture	21	90	130	1,68
Abster of Business Administration	Business Administration	329	98	83	10,69
Master of City and Regional Planning	City and Regional Planning	27	90	105	1,48
Master of Education	School of Physical Activity and Educational Services School of Teaching and Learning	45 328	50 50	58 68	36 5,90
Waster of Fine Arts	Art Dance English Industrial, interior, and Visual Communication Design Theatre	22 6 11 11 3	90 90 90 90 99	130 113	1,03 48 69 67 25
Waster of Health Administration	Health Services Management and Policy	26	84	94	1,14
Waster of Labor and Human Resources	Labor and Human Resources	36	64	80	1,08
Waster of Landscape Architecture	Landscape Architecture	10	118	123	73
Master of Music	Music	19	45	65	28
laster of Occupational Therapy	Allied Medical Professions	First degrees awarded Sp05			
Master of Physical Therapy	Allied Medical Professions	36	50	117	2,41
Mast of Public Health	Public Health	46	50	68	82
Aaster of Public Administration	Public Policy and Management	13	72	84	44
Aaster of Social Work	Social Work	166	60/90	86	5,97
fotals:		1,233	74	99	40,93
Total number of masters degrees awarder Number of terminal masters degrees awa Number of non-tagged terminal masters a Average hours at receipt of masters degre Average hours at receipt of masters degre	rded warded			89 79	2,59 1,90 66
otal number of Candidacy examinations lumber of successful Candidacy examina otal number of PhDs awarded	tions				73 69 56
excess terminal masters hours (less Busin	ess & Education) red masters recipients				23,97 19,61

<u>Table 4: List to "Tagged" Masters Programs and Calculations of Total excess (Doctoral) hours</u>
<u>earned by Terminal Masters Students</u>

• Graduate Credit Hours are easily manipulated, for the benefit of individual programs, or for the University at large. For Doctoral programs, the majority of the 260 hours (or more) are 999 research credits. Historically students have been required (or at least strongly encouraged) to register for at least 10 credit hours during summer quarter. Use of fee authorizations made this a no-cost option for the student and, under the historic BoR requirements described above, was important for setting the University's reported Doctoral FTE count. However, under the current BoR Doctoral subsidy limits and current internal SSI distribution models, this practice generates no additional resources but simply redistributes existing resources based on shifts in these 999 credit hours of enrollment-again, with no central management. It is this internal manipulation of 999 credit hours that must be controlled centrally so that financial resources for Doctoral education can reward program quality and Ph.D. graduation rates. (It is worth emphasizing again that to obtain the maximum State funding for Doctoral education the University-wide reported Doctoral FTE be as

close to the minimum of 3,920 per year as can be effectively managed-that is without slipping below this number.)

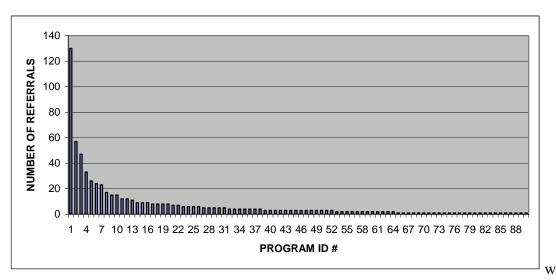
### C) Our Current State: Role of Budget Restructuring on Graduate Education

With the advent of the new budget model at OSU in 2002, a conscious decision was made to simply map over onto graduate education the model which was designed for undergraduates<sup>†††</sup>. There are fundamental differences between the UG and GS processes at OSU that, with the spread of understanding of how Budget Restructuring works for each unit in Doctoral education, has given rise to behaviors which, while rational from an individual unit's financial position, are largely contrary to the Academic Plan, much less in support of excellence in graduate education:

- For UGs, no unit can directly admit a student to a given department or program. The total number of students, the minimum qualifications, and the overall balance of a given year's admitted class is controlled centrally. While a given unit can recruit UG students (and the best units do), the recruited students must pass the admission standards of the University as a whole, and the total number of students admitted to the University is a tightly controlled quantity. In so doing, OSU strategically aligns its UG numbers with its resources, while simultaneously increasing the qualifications of each entering class.
- For graduate education, each program or unit is free to recruit AND admit students
  with no central control over the quality or number. The admission standards can and
  do vary widely across the approximately 100 Doctoral programs in the University.
  Such variation in quality is suggested by a list by program of requests to the Graduate
  School to admit applicants

-

<sup>†††</sup>The document, "Budget Restructuring Basics," dated January 10, 2002 (http://www.rpia.ohio-state.edu/budget\_planning/budget\_restruct.htm), states that for FY 2003, marginal changes in Doctoral subsidy will be distributed based on the rolling two-year average of Doctoral student credit hours weighted by historical Doctoral subsidy levels (in the Doctoral I and Doctoral II categories), except that nothing over 260 hours is counted. *This was only intended to be the funding formula for one year. The document states on page 10: "For fiscal year 2004 and beyond, the distribution of marginal changes will be based on the quality of existing programs and the needs of newly approved Doctoral programs.*" The document went on to note that the Budget Advisory Committee (a temporary committee no longer in existence) was reviewing recommendations about implementation. That committee never finished its assignment; in many ways, the work of this committee, combined with the work of the Beck committee, is the realization of the original mandate from January 2002.



who's GPAs are less than 3.0.

<u>Table 7. Request for "referrals"—basically exemptions from the 3.0 GPA minimum for entrance into OSU Graduate Programs—for all OSU Graduate Programs.</u>

- In the Table 7, "referral" means a single request for exemption from the University's requirement of an UG grade point of 3.0 for admission to any graduate program. The data in this figure are from one year (2004); the number of requests for that year total 664.
- Given that there is a fixed sum of Doctoral SSI from the state, independent of FTE (within the bounds described above), and since the Doctoral graduate SSI is currently allocated within the University solely on FTE headcount--where each graduate FTE is credited with the same SSI, regardless of program quality--any individual unit cannot move in any direction but to increase its effective graduate FTE just to hold its place in the total available funding. That is, while the best pedagogical path to improvement of a unit's graduate education, and its support of excellent graduate students, may well be to reduce or hold constant the number of Doctoral students within a given program, there is an insurmountable financial disincentive to do so. Yet the total Doctoral SSI pool is fixed, independent of the FTE (above 3960). Thus every year the available Doctoral SSI per credit hour *in every program* falls. Taken as a whole, this is equivalent to holding hands across all 100 Ph.D. programs and stepping off the financial abyss.
- Graduate Fee Authorizations (GFA) are complicated by their historical base assignment (based upon a snapshot of FY 2002 actual results). Because of the decision at the advent of Budget Restructuring that graduate education reform was explicitly left out, no attempt at assigning this very large resource on any basis consistent with the Academic Plan was undertaken<sup>‡‡‡</sup>. The result is that the continuing base budgets assigned from centrally held GFA are now integrated into

\_

<sup>‡‡‡</sup> Estimated resident GFA continuing funds transferred to the Colleges in 2002 totaled \$27.5M

- individual programs across the University based solely on the quantity (not quality) of graduate students in 2002.
- The inescapable conclusion is that currently OSU, as a University, has no mechanism for adjusting the total number of graduate students to its financial resources. Further, the individual units have no financial incentive to behave in a manner that promotes quality of student over quantity, nor does the mechanism reward actual Ph.D. graduation rates, but rather promotes the increase of total graduate students in residence. It also encourages programs to have Masters students complete more than 50 credit hours, at which time they earn Doctoral subsidy. Further, since the University has not developed programs that encourage the payment of graduate tuition by external sources whenever possible (as do our aspirational peers), the result is that the oft stated "when it comes to graduate tuition, we pay ourselves" isn't as bad as it appears: it's worse. Under Budget Restructuring, the graduate units have had to pay the increases above the 2002 PBA for GFA's, and the increase in graduate student benefits as well. The marginal tuition and subsidy income allocated to colleges for changes in graduate enrollment and rates is taxed at 24% §§§. Therefore, as asserted above, there is no University, nor individual unit, financial mechanism to encourage educational standards that may reduce or hold constant the number of graduate students, even for a strategically determined period of time. Put more directly, the current financial model rewards quantity of enrolled graduate students, almost surely at the direct expense of quality and graduation rates. The lack of any distinction between Masters and Doctoral students in our subsidy distribution formula has persistently eroded the financial base for Doctoral education. This simply must be fixed.
- In fact what the Committee has discovered is that due to the extraordinarly wide spread use of GFAs, the financial problem facing Doctoral education at OSU under the current financing system may actually be <u>much</u> worse than suggested above: The committee, using data obtained from the Office of Senior Vice President for Finance, performed **detailed** calculations for one of the College units represented by a Dean on the committee. In this calculation, all costs, taxes, the effects of student-by-student marginal GFA increases per year, as well as income adjustments to SSI and tuition increases were included (that is, the true <u>net</u> cost of each Doctoral student was specifically calculated), it was found that each new Doctoral graduate student admitted to that College **cost** the unit \$450 per year in 2003, and approximately \$500 per year in 2004. These calculations were submitted to the Office of Finance and were verified in detail.\*\*\*\*\*

Except for the portion of graduate fee increases that exceeded 6%/yr in FY2005.

<sup>\*\*\*\*.</sup> The Committee is aware of the argument sometimes proposed that revenues returned to a unit from teaching and/or research should be attributed to GTA or GRAs within the unit. For most College units, this argument is specious, a fact that can be readily understood by considering that the revenues to the unit from teaching or research are booked as a result of faculty activity. Indeed, funds for faculty salaries, benefits and raises, as well as other expenses borne by the College unit, are obtained by the units as a direct result of the work of the faculty. The corresponding accounting costs booked against this revenue include a myriad of items: for this argument, the major one is the GTA help for the teaching, or the GRA help for the research. Thus attempting to attribute revenue to GTA or GRAs separately in these cases is clearly double-

an isolated case, these dire financial conditions exist to one degree or anther in virtually all the units with large numbers of Doctoral graduate students.

## **Recommendations: Moving Forward**

### **Immediate Next Steps**

- 2. The Graduate School must formulate and implement a firm, clearly delineated, and explicitly monitored policy of extracting terminal Masters programs from the

counting. There are College units, and individual programs within Colleges, in which. GTAs act as independent instructors of record, teaching sections with minimal if no oversight by faculty. In these cases, a careful attribution of income vs cost would be of value. COMMENT FROM SENATE FISCAL:"It is clear that if one allocates revenues generated by teaching assistants in sections they have taught back to each teaching assistant, and then allocates full costs of the appointment of that assistant, it can be seen as "profitable" for a unit to increase the number of doctoral students, even if subsidy levels decline or are denied due to poor quality assessments. This conclusion results from looking at resource flows (i.e., costs as well as revenues) in ways different from those adopted by the Freeman Committee. The ability to deal with this issue raises a fundamental matter of administrative and faculty governance. It should be resolvable through intervention of the provost with input from the graduate school or other locus of quality control."

This is not revolutionary. We note that virtually all of our aspirational peers follow such procedure for graduate student enrollment in the summer.

‡‡‡‡COMMENT FROM SENATE FISCAL: "Since the university's ability to internally set subsidy levels for doctoral education depends on the total number of credit hours generated, the locus of quality control (e.g., graduate school) should modify existing rules to minimize the generation of doctoral credit hours required for funded graduate students. It is also important to note that subsidy eligibility needs to be sustained in ways that are consistent with graduate student needs to meet health benefit limits, immigration requirements and student status for loan purposes. Subsidy eligible credit hours also are appropriate for students doing thesis research in any quarter, though the number of credit hours taken by such students should reflect their overall level of thesis research activity, just as the credit hours assigned to other courses are expected to reflect the level of student activity. We realize that this is difficult to monitor but this could be handled through an appropriate limit to the number of credit hours that count for a given student for internal enrollment distribution in a given quarter. This recommendation is certainly consistent with the spirit of the Freeman Committee report".

Doctoral programs. That is, the Graduate School must promulgate and police policies that "clean-up" the Doctoral SSI pool. All units at the University must be required to clearly delineate the boundaries and the reasons for the boundaries, between terminal Master degrees and Master degree programs that are stepping stones to the Ph.D. (This conclusion is strongly supported by Senate Fiscal). This is essential, and it is the consensus of this committee that such a process be implemented and completed no later than the end of winter quarter, 2006. To repeat: there is no preconceived notion of the optimal number of Master's students vs. Doctoral students at OSU, but such an important educational decision must be determined from first principles and not left as a consequence of unthinking fiscal management.

### **Steps in the Near Term**

Before significant steps can be taken to improve the funding distribution formulas for graduate education, the University must address fundamental issues associated with the management of graduate enrollments.

• In the opinion of the committee, Doctoral graduate education cannot be fiscally managed by rewarding only credit hours taught. The fiscal model of Budget Restructuring was designed for UG education and as currently applied at OSU simply doesn't accomplish the educational goals inherent in Doctoral graduate education. The committee is unanimous in recommending the "centralization" of Doctoral graduate student admissions, and oversight of the quality and number of Doctoral graduate students within every Doctoral graduate program at the University. In the committee's opinion, the University's interests are best served in Doctoral education by primarily rewarding program quality and graduation rates. Focusing on these two parameters will create the only conditions that can promote excellence as

As Senate Fiscal advises, these actions will require University-wide budget planning and analysis of budget implications for units. There would have to be procedures adopted centrally to help individual units which would not be able to adopt such reforms without intolerable financial consequences.

recognized by our peer institutions, new faculty, prospective graduate students, and most importantly, ourselves.\*\*\*\*\*

- The Graduate School is THE entity that should assume the duties outlined above: central control over *Doctoral* graduate programs, including setting admissions standards and controlling the number of Doctoral admissions per year within any program, and as a sum across the University. The committee is unanimous in recommending to the Beck committee that a powerful, centralized authority be built within the Graduate School, overseen by the Graduate Dean and augmented by significant faculty committees for guidance and recommendations for detailed application of this centralized authority, particularly, as pointed out by Senate Fiscal, that some units have mostly Masters programs.
- The Provost explicitly charged this committee with examining Doctoral programs only, but we have discovered that there is no well defined line between Doctoral and Masters programs at OSU that is either transparent or open to easy analysis. (This is due in no small part to the BoR regulations on SSI by credit hour for any entering graduate student.) OSU has a mixture of Terminal or Tagged Masters programs, as well as those which can loosely be defined as "leading to a Ph.D.". The nature of this mixture is a function of individual programs, and further, is not well documented. Thus no clear discussion of the number of Masters programs nor the total number of Masters students can be held without completing #2 in the section above under Immediate Next Steps.
- The committee fully recognizes that many Doctoral programs admit to Masters programs that are stepping stones to the Ph.D., and we have no wish to interfere with such academic decisions. However; there is an immediate step towards clearing up the confusion between Terminal Masters programs and Ph.D.-bound students earning a Masters that can be implemented immediately: while the student is working on the Masters, the student should only earn Masters subsidy. That is, students enrolled in Masters programs should be allocated Masters' subsidy, even after 50 hours have accrued. Furthermore, when the student finishes his/her Masters and wishes to continue onto the Ph.D., the student must apply to and be vetted by the Graduate School.
- While the committee is firm on the principle that graduate resources within the University must ultimately be adjusted according to program quality, there is at least one mechanism that can be instituted immediately that would replace resource allocation upon quantity of enrolled Doctoral graduate students with a metric that rewards actual numbers of Doctoral degrees awarded (normalized, of course, by the size of the program). While this is not a panacea for correctly rewarding excellence, it is a good place to start. The committee is in possession of University-wide data over 5

-

<sup>\*\*\*\*\*</sup> The Advisory from Senate Fiscal cautions against removing graduate education from the Budget Restructuring model. There is, however, complete agreement that extraordinary oversight and review of the application of credit hour driven to Doctoral education is required. Centralization of authority for supervision of credit hours, total students and their quality must be invested in the Graduate School.

and 10 years periods which show the ratio of graduate students admitted to the number actually receiving the Doctorate (see Figure 8 below. †††††). These ratios

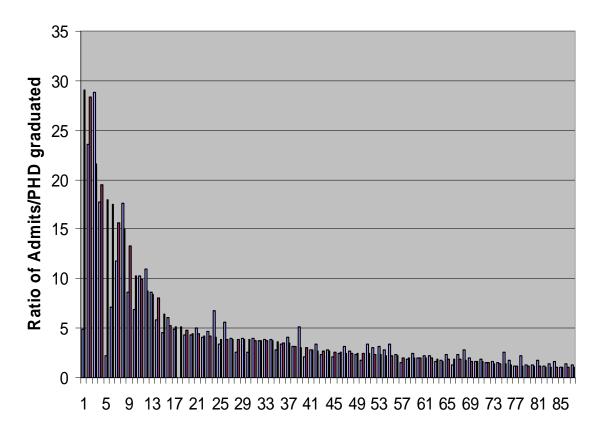


Figure 8. Ratio of Admissions to Graduate Programs to Number of Ph.D. Degrees Granted averaged over 10 years (larger bars) and 5 years (narrower bars) for each Ph.D. program at OSU.

differ between Doctoral programs significantly. For these data, a program that that chooses its admitted students carefully with the full expectation they will graduate will have a ratio close to one, while those that admit students with much less scrutiny will have ratios that are higher. Senior faculty at OSU that have served on external review panels of our aspirational peers invariably report that this ratio for programs rated excellent at these institutions have the equivalent ratio very nearly one.

All units in which external funding is customary or expected, tuition must be charged
to grants or contracts from these sources along with stipends for the support of
students. However, this recommendation should be enforced only if the Graduate
School immediately authorizes a committee, with a very short time line, to calculate

20

<sup>††††</sup>The solid lines are 5 year averages, while the open lines are 10 year averages for each program. There is a strong correlation between the behavior of programs over 5 year span compared to a 10 year span. Further, the committee has extensive Graduate Student and Admissions office data that show a high correlation between those programs that graduate a higher fraction of their admitted students with the quality of the admitted students.

an appropriate point in the time-line of the studies of a Doctoral student after which, for a finite period, the tuition for that student is reduced or eliminated . The committee finds this to be one of the most important reforms in our finances of Doctoral education. If we are to require tuition on grants, and simultaneously encourage the support of students over post-docs, this move is essential. This dual practice is followed by our aspirational peers, and will become financially feasible if the above reforms are implemented.

- GFAs were de-centralized in FY2002 as part of the original Budget Restructuring. Allocation of this large resource (\$27.5M in FY2002) should be based on the principles of the Academic Plan and the enhancement of high quality graduate programs. Consideration of re-centralization or re-allocation of the GFAs funds should occur during the promised re-basing exercise as envisioned in the original Budget Restructuring documents. The quality of Doctoral Programs should be a major consideration in such re-basing discussions. It is apparent that internal resources exist within the Graduate School that might be re-allocated away from Masters programs to support high quality Doctoral programs. This is a decision that would rest with the Graduate School Dean, his/her advisors and the Provost.
- The committee is fully aware that it is crucial that the financial implications of our recommendations be modeled and vetted in a rigorous manner: the budgetary implications of our recommendations across the University must be modeled prior to implementation. It may be necessary to phase-in some recommendations to ease the

As pointed out by Senate Fiscal, in this fiscal biennium, the state legislature created the Innovation Incentive Fund which, provided OSU makes a compelling case, could result in additional funds of as much as \$2M in FY06 and \$4M in FY07 for use in rewarding and encouraging the highest quality Doctoral Programs on the campus.

The Committee recognizes, as does Senate Fiscal. that the financial implications of this recommendation must be thoroughly modeled and understood before implementation.

The Committee notes that if the reforms recommended in this report are undertaken, there will be sufficient resources for this rolling review. Our estimates of the yearly costs of implementing such a plan are less than \$150 K/year for the entire University.

transitory financial impact on colleges and central units. Senate Fiscal would be the appropriate body for this analysis. The committee strongly suggests that many of the financial changes outlined here be implemented no later that FY 07.

# A CHARGE TO "FREEMAN COMMITTEE:"

- 1. How can we ensure that Doctoral education serves the goals of the Academic Plan? What continuing procedures should be implemented to monitor the role of Doctoral education at OSU?
- 2. Recommend a process for assessing the quality of Doctoral programs and appropriate metrics. These metrics should include, but are not limited to, appropriate external rankings as well as internal procedures.
- 3. Recommend a sustainable funding model for graduate education that will align state subsidy with quality. Priorities for investment are a) programs that are already ranked as very good or excellent; b) additional programs that are essential for any great public research University (whether already strong or not at OSU); and c) programs that make unique contributions to or derive unique strength from the State of Ohio.
- 4. To generate resources for investment, propose a set of criteria by which I could consider the following options for programs deemed as too weak to be sustained at their current level: a) eliminating programs; b) strategically reducing the size of programs; c) freezing programs at their current size; or d) merging programs.
- 5. Should there be University-wide criteria on funding graduate research associates from grants? If so, recommend appropriate criteria.

### <sup>B</sup> CHARGE TO "BECK COMMITTEE:"

- "...I am asking you to consider the current structure and functions of the Graduate School, the optimal structure and functions and recommendations for change that will bridge any gap. As part of your charge I am requesting that you examine:
- the current organizational structure;
- the various models of graduate schools among our benchmarks;
- the appropriate mission of a graduate school in a research institution;
- the functions of the Graduate School and its committees;
- the desired interaction between the Graduate School and colleges an departments and between the Graduate School and OAA and OR; and
- some specific issues, such as the process by which Graduate School fellowships are allocated and the role of Graduate School representatives on graduate examinations and Ph.D. defenses."

### <sup>C</sup> GOALS AND PROCEDURES PUBLISHED IN INTERIM REPORT I

The Committee proposes a variety of funding strategies to promote outstanding Doctoral education, including program review and differential funding based on quality, as well as initiatives intended to create a funding model that fosters quality in Doctoral education These include:

- 1) identify a set of metrics to assess quality of Ph.D. programs
  - a. proposed metrics outlined in the interim report were discussed at Council of Deans on 11/18/2004; these will be used to propose a model of resource allocation based upon quality
  - b. data collection for several Ph.D. programs is currently underway
  - c. we will assess the model output against our perceptions and against results
  - of recent external reviews/accreditation exercises to judge its validity
  - d. assuming validity, we will propose how the model might be used more broadly
- 2) Study and propose new budget models for funding Doctoral education; key elements to be studied will include

- a. differential tuition by student status (e.g. pre-and post candidacy)
- b. differential allocation of fee authorization across programs
- c. differential allocation of fee authorizations for GRAs versus GTAs and GAAs
- d. differential tax on graduate subsidy and tuition based upon program quality
- e. A Selective Investment program for graduate education taxing some programs and investing it in others
- f. Costs must be identified and a strategy to pay for them developed
- g. The new budget model should be explicitly connected to graduate education quality and the research metrics that drive this quality
- h. Incentive programs that recognize and support entrepreneurial activity (e.g. fee authorization support for programs with substantial external support)

#### **GLOSSARY**

- 1. BoR = Board of Regents, the statewide body overseeing higher education in all Ohio public 2-yer and 4-year institutions. They receive funds from the Legislature and allocate them out; they also set policy and review programs.
- 2. SSI = State Share of Instruction, funds allocated to the University by the Board of Regents based on an exceedingly complex formula. The BoR has numerous categories of subsidy, based on the student's program of enrollment as well as the actual courses in which that student enrolls.
- GA = Graduate Assistant; these include GAAs, GRAs, and GTAs; GFA = Graduate Fee Authorization
- 4. Doctoral Subsidy is allocated to graduate students enrolled in Ph.D., Pharm D, and D. Audiology Doctoral programs. Also any master's student with more than 50 credits earns "Doctoral" subsidy; the exceptions are MBA students and M. Ed. Students, who earn subsidy in their own categories.
- 5. Professional Doctoral degrees (MD, DVM, et al. ) are entirely excluded from our discussions.
- 6. Tagged Master's degrees include the MSW, MFA, MPA, and a host of others that are preprofessional programs, without accompanying Ph.D. options.
- 7. Terminal master's degrees are non-tagged (MS, MA) but designed to be self-contained, not to lead to Doctoral study. The MS in Nursing is an example of a terminal non-tagged degree.