

The Graduate School Strategic Plan 2008-2013

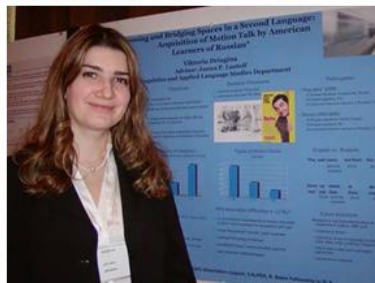


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Vision

Penn State will be one of the nation's preeminent universities in graduate education and research, and a "first choice" university for graduate students.

Mission

The mission of the Graduate School is to promote the highest quality of graduate education and to ensure that all Penn State graduate students, regardless of ethnicity, gender, or other personal characteristics, are afforded the opportunity to achieve their full potential as future scholars and professionals.

EXECUTIVE SUMMARY

The Graduate School at Penn State is the umbrella organization responsible for overseeing the admission, matriculation and graduation of all graduate students, excluding professional students in the College of Medicine and The Dickinson School of Law, and is the home for a number of Intercollege Graduate Degree Programs. Penn State has over 150 graduate degree programs with 108 doctoral programs, 117 academic master's (M.A. and M.S.) and 83 professional master's degree programs. In addition to its administrative functions, the Graduate School is the central unit that promotes and provides professional development for students to augment the efforts of graduate programs and colleges. The Graduate School also serves as the body that reviews the quality of graduate degree programs; coordinates with the colleges, through the associate deans, national thinking on graduate education; and helps to align strategies of interest with individual colleges.

This report frames the status of graduate education at Penn State and lays out goals (1) intended to drive the quality of graduate education throughout the institution and (2) required to support the infrastructure that allows the management of programs and student needs.

Status of Graduate Education

- We have lost total graduate student enrollment share.
- This loss is reflective of loss of master's degree students.
- We have become more selective in admission of graduate students and more successful in recruiting doctoral students.
- The total number of African American students has declined.
- The total number of international students has declined.

Advance Strategies in Support of Graduate Education Quality

- Continue to conduct regular graduate program reviews
- Promote increases in fellowship support
 - In the next five years, bring in at least 35 additional new Distinguished Graduate Fellowships.
 - Explore opportunities for fellowship programs with foundations.
 - Target a high concentration of NSF Incentive Awards with the goal of an increase of 15 new NSF Fellowships above the historical level of 6-8 new awards over the next five-year period.
- Offer value-added workshops and certificates that will enhance graduate student capabilities.
- Increase interdisciplinary/cross college graduate education by promoting the dual-title graduate degree program strategy.
- Explore developing new professional master's degrees as an opportunity to deliver needed education and as a revenue generator. Consideration should be given to resident and online offerings. A business model will need to be developed for

resident offerings that would create the incentive to explore these potential opportunities.

- Global opportunities in graduate education should be explored including:
 - concurrent degrees,
 - integrated baccalaureate/master's and master's/doctoral programs,
 - certificate programs,
 - online opportunities.

Improve Diversity of the Graduate Student Population

- Enhance the success of the Summer Research Opportunities Program (SROP) in recruiting students from underserved groups to graduate school at Penn State. Through prudent selection of SROP students, strive to entice 75% of these individuals to apply to Penn State for graduate school, with the goal of 50% of the SROP student pool eventually enrolling in graduate school at Penn State.
- More aggressively recruit students from McNair programs throughout the United States to apply for graduate school at Penn State, and provide a mechanism to track the application and enrollment of these students. The goal of this effort will be to enroll 20-25 McNair alums per year.

Enhance Graduate School Services

- Implement a new electronic application with enhanced features for creating a digital record of all application materials including student documents (résumé, personal statement, writing sample), letters of recommendation, and program-specific questions.
- Enhance the ability to track the success of recruiting underrepresented students through participation in SROP and McNair by adding features to the online application for these scholars to self-identify during the application process, and to capture these responses in an electronic database.
- Provide the capability for graduate program faculty to view the complete student application record as a shared file for admissions decisions through GRADS interface.
- Create online workflow systems for high volume processes and forms, such as Resume Study.
- Establish a Knowledge Base for graduate education linked through the Graduate School Web pages.
- Boost membership of graduate alumni in the Penn State Alumni Association.
- Increase participation of graduate alumni in new and existing opportunities and programs.
- Involve international graduate alumni in recruiting new international graduate students and mentoring current international graduate students.
- Create online systems for colleges to report on Graduate School funding programs (e.g., Fund for Excellence in Graduate Recruitment) to provide summary data of expenditures.

INTRODUCTION

The Graduate School at Penn State is the umbrella organization responsible for overseeing the admission, matriculation and graduation of all graduate students, excluding professional students in the College of Medicine or The Dickinson School of Law, and is the home for a number of Intercollege Graduate Degree Programs. Penn State has over 150 graduate degree programs with 108 doctoral programs, 117 academic master's (M.A. and M.S.) and 83 professional master's degree programs. In addition to its administrative functions, the Graduate School is the central unit that promotes and provides professional development for students to augment the efforts of graduate programs and colleges. The Graduate School also serves as the body that reviews the quality of graduate degree programs; coordinates with the colleges, through the associate deans, national thinking on graduate education; and helps to align strategies of interest with individual colleges.

This plan is divided into several sections. First, we will review the profile of the graduate student body at Penn State, highlighting changes of significance. Second, we will pose questions that are central to graduate education and offer answers to the questions and related goals to support a recommended strategic direction. In the third section, we will review the service element of the Graduate School and feature the goals associated with that set of functions. Lastly, we will address the financial implications of the recommended goals. Before embarking on the body of the plan, we wish to point out that some of the recommended goals can be addressed by the staff within the Graduate School. Other goals can be addressed by the Graduate School staff in collaboration with the colleges. There are other goals, however, that can only be addressed by the colleges; the Graduate School can provide encouragement and support, but they are clearly college-oriented activities.

I. Graduate Student Profile

The following observations reflect graduate student enrollment trends over the last ten years. These data are presented in the aggregate, reflecting total enrollments throughout the Penn State system. While these trends provide an over-arching picture of the University, real meaning will require a more dissected view of the data and are available on the Graduate School "Executive Suite" (<https://secure.gradsch.psu.edu/execsuite/>).

Resident graduate student total enrollments peaked in 2003 and have declined since then (Figure 1). Enrollments in 2007 were the lowest in ten years. The decline was mirrored when nondegree and master's degree student numbers were compared across the same time period (Table 1). In contrast, enrollment of doctoral students has increased steadily throughout the ten-year time frame. Enrollment of new students followed a similar trend to that of total student numbers, although the peak for master's students occurred in 2001 (Table 2). World Campus enrollments of graduate students have increased in the last two years (Table 1). Data for years previous to 2006 have not been collected in a way that allows them to be compared with data presented for these last two years. The World Campus data do not distinguish between degree and nondegree students, but in the aggregate, these enrollments compensate for the drop in enrollments observed for resident students.

Figure 1. Total Resident Graduate Enrollments (Degree and Non-degree; all locations excluding World Campus).

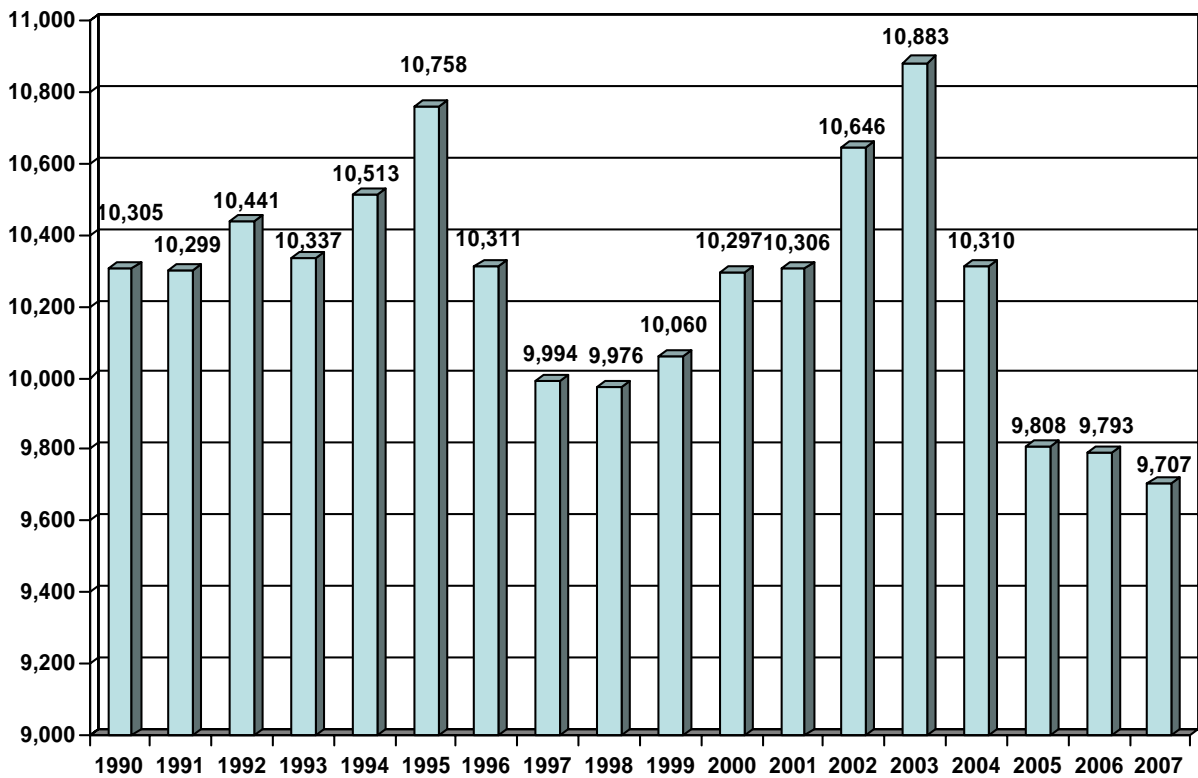


Table 1. Total Graduate Enrollments by Degree (All Locations including World Campus).

	Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007
Doctoral Degrees										
Ph D	3,501	3,470	3,493	3,585	3,792	4,109	4,199	4,183	4,220	4,261
D Ed	196	187	176	160	184	173	172	155	153	140
Total	3,697	3,657	3,669	3,745	3,976	4,282	4,371	4,338	4,373	4,401
Master's Degrees										
M S	1,547	1,648	1,751	1,804	1,778	1,656	1,359	1,266	1,255	1,210
M A	326	338	350	359	375	390	398	389	375	351
Professional Master's	2,893	2,838	2,822	2,936	2,907	2,993	2,826	2,796	2,762	2,773
Total	4,766	4,824	4,923	5,099	5,060	5,039	4,583	4,451	4,392	4,334
Other										
Certifications	214	230	233	239	211	206	198	184	169	143
Non-degree	1,299	1,349	1,472	1,223	1,399	1,356	1,158	835	859	829
Total	1,513	1,579	1,705	1,462	1,610	1,562	1,356	1,019	1,028	972
Total Resident Instruction	9,976	10,060	10,297	10,306	10,646	10,883	10,310	9,808	9,793	9,707
World Campus										
Prof Master's									559	711
Certifications									0	3
Non-degree									1,408	1,715
Total World Campus									1,967	2,429
Total Resident Instruction and World Campus	9,976	10,060	10,297	10,306	10,646	10,883	10,310	9,808	11,760	12,136

Table 2. New Graduate Enrollments by Degree, at All Locations (Resident Only)

	Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007
Doctoral Degrees										
Ph D	559	559	584	589	638	701	647	651	671	691
D Ed	20	13	18	13	19	21	14	8	10	11
Total	579	572	602	602	657	722	661	659	681	702
Master's Degrees										
M S	491	539	536	590	495	427	333	413	383	373
M A	119	120	131	117	131	128	124	135	114	108
Professional Master's	546	591	590	564	580	636	553	576	649	597
Total	1,156	1,250	1,257	1,271	1,206	1,191	1,010	1,124	1,146	1,078
Other										
Certifications	66	61	45	43	33	45	21	39	30	20
Non-degree	509	546	550	531	645	576	522	357	374	379
Total	575	607	595	574	678	621	543	396	404	399
Total Resident Instruction	2,310	2,429	2,454	2,447	2,541	2,534	2,214	2,179	2,231	2,179

Enrollments at University Park rose steadily from 1998 to 2003 and, after a brief decline, are again on an upward trajectory. The College of Medicine has maintained its enrollments. Thus, the drop in enrollments is in large measure due to the decline in enrollments at Penn State Erie, The Behrend College; Penn State Harrisburg; and the Penn State Great Valley School of Graduate Professional Studies (Table 3).

The absolute number of graduate students from underrepresented groups reached a high of 630 students in 2003 (Table 4). Since that time, the numbers have declined; this is attributed to a decline in the number of African American students. On a percentage basis, one could argue that the status of underrepresented graduate student numbers has stayed quite static. In 1998, African American graduate students accounted for 3.3% of the total resident graduate student body; in 2003 that number was 3.5% and in 2007 was at 3.3%. In contrast, African American students accounted for 4.2% of the undergraduate student population in 1998, 4.9% in 2003, and 5.9% in 2007. Alternatively, total numbers of Hispanic graduate students has increased steadily over the last ten years. Native American graduate student numbers are at an all time low.

Numbers for new international graduate students reached a peak in 2001, and for total (new and returning) students, that peak was reached in 2004 (Figure 2). New student numbers declined after 2001, but the decline appears to have leveled off. A similar trend is observed for total numbers of international graduate students.

The top five countries from which graduate students are recruited continue to be China, India, Korea, Taiwan and Turkey (Table 5). Despite all the growth in China's educational system, we have the largest cohort of Chinese graduate students of any time in the last ten years; the same can be said for graduate students from India. We are seeing a decline in numbers of international graduate students from Taiwan, Korea and Turkey.

Domestic graduate student applications dropped modestly in 2004, but have been increasing steadily since that time to reach a ten-year high in 2007 (Table 6). International graduate student applications, which exceeded in number those of domestic students through 2003, declined significantly in 2004. While rebounding to some extent, the numbers of international applicants in 2007 are still 1,700 lower than in 2003. For 2007, total international enrollments were not changed from the previous year, whereas nationally, total international enrollments were up 7% based upon data provided by CGS member institutions (Table 7).

Table 3. Degree/Non-degree Resident Graduate Enrollments by Campus Location.

		Fall Degree / Non-Degree Enrollments											
		Official Enrollment File										#	%
		Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Change	Change
University Park	Degree	5,732	5,663	5,646	5,711	5,907	6,161	5,987	5,795	5,866	5,945	79	1.35%
	Non-Degree	399	490	519	578	709	632	478	277	311	281	-30	-9.65%
	Total	6,131	6,153	6,165	6,289	6,616	6,793	6,465	6,072	6,177	6,226	49	0.79%
Penn State Erie	Degree	154	138	176	148	118	128	150	159	163	138	-25	-15.34%
	Non-Degree	5	9	9	10	6	1	3	1	1	2	1	100.00%
	Total	159	147	185	158	124	129	153	160	164	140	-24	-14.63%
Great Valley	Degree	1,346	1,423	1,434	1,526	1,424	1,319	1,106	1,094	1,077	1,044	-33	-3.06%
	Non-Degree	258	196	179	161	155	145	199	192	242	194	-48	-19.83%
	Total	1,604	1,619	1,613	1,687	1,579	1,464	1,305	1,286	1,319	1,238	-81	-6.14%
Harrisburg	Degree	1,173	1,122	1,176	1,311	1,369	1,456	1,499	1,525	1,419	1,357	-62	-4.37%
	Non-Degree	260	238	217	166	179	239	183	143	121	115	-6	-4.96%
	Total	1,433	1,360	1,393	1,477	1,548	1,695	1,682	1,668	1,540	1,472	-68	-4.42%
Hershey Medical Center	Degree	148	163	188	175	180	214	213	207	204	210	6	2.94%
	Non-Degree	3	6	5	4	5	13	10	21	22	19	-3	-13.64%
	Total	151	169	193	179	185	227	223	228	226	229	3	1.33%
Other Abington, Altoona, Berks, Schuylkill Commonwealth College, Lehigh Valley	Degree	124	202	205	212	249	249	197	193	205	184	-21	-10.24%
	Non-Degree	374	410	543	304	345	326	285	201	162	218	56	34.57%
	Total	498	612	748	516	594	575	482	394	367	402	35	9.54%
Total University	Degree	8,677	8,711	8,825	9,083	9,247	9,527	9,152	8,973	8,934	8,878	-56	-0.63%
	Non-Degree	1,299	1,349	1,472	1,223	1,399	1,356	1,158	835	859	829	-30	-3.49%
	Total	9,976	10,060	10,297	10,306	10,646	10,883	10,310	9,808	9,793	9,707	-86	-0.88%

Table 4. Total University Resident Graduate Enrollments by Ethnicity and Gender.

		Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007
African American	Female	195	183	186	181	208	220	227	220	192	175
	Male	149	156	155	174	172	165	147	147	173	152
	Total	344	339	341	355	380	385	374	367	365	327
Hispanic American	Female	86	87	88	91	90	111	100	106	131	117
	Male	92	84	81	71	71	88	93	78	90	115
	Total	178	171	169	162	161	199	193	184	221	232
Native American	Female	27	21	18	15	24	33	22	19	12	10
	Male	9	13	17	8	9	13	4	10	12	12
	Total	36	34	35	23	33	46	26	29	24	22
Total Underrepresented Students	Female	308	291	292	287	322	364	349	345	335	302
	Male	250	253	253	253	252	266	244	235	275	279
	Total	558	544	545	540	574	630	593	580	610	581
Asian American	Female	124	141	129	151	161	149	146	162	155	171
	Male	148	164	167	178	182	194	191	186	179	189
	Total	272	305	296	329	343	343	337	348	334	360
International	Female	649	727	797	882	923	958	934	935	931	925
	Male	1,264	1,332	1,442	1,495	1,559	1,581	1,564	1,460	1,506	1,488
	Total	1,913	2,059	2,239	2,377	2,482	2,539	2,498	2,395	2,437	2,413
White	Female	3,411	3,423	3,534	3,462	3,639	3,797	3,520	3,272	3,196	3,073
	Male	3,418	3,347	3,273	3,204	3,173	3,246	3,048	2,895	2,829	2,778
	Total	6,829	6,770	6,807	6,666	6,812	7,043	6,568	6,167	6,025	5,851
Declined To Report	Female	215	217	242	216	236	139	141	134	173	231
	Male	189	165	168	178	199	189	173	184	214	271
	Total	404	382	410	394	435	328	314	318	387	502
Totals	Total Female	4,707	4,799	4,994	4,998	5,281	5,407	5,090	4,848	4,790	4,702
	Total Male	5,269	5,261	5,303	5,308	5,365	5,476	5,220	4,960	5,003	5,005
	Total University	9,976	10,060	10,297	10,306	10,646	10,883	10,310	9,808	9,793	9,707

Figure 2. Total New and Returning International Graduate Students (All Locations).

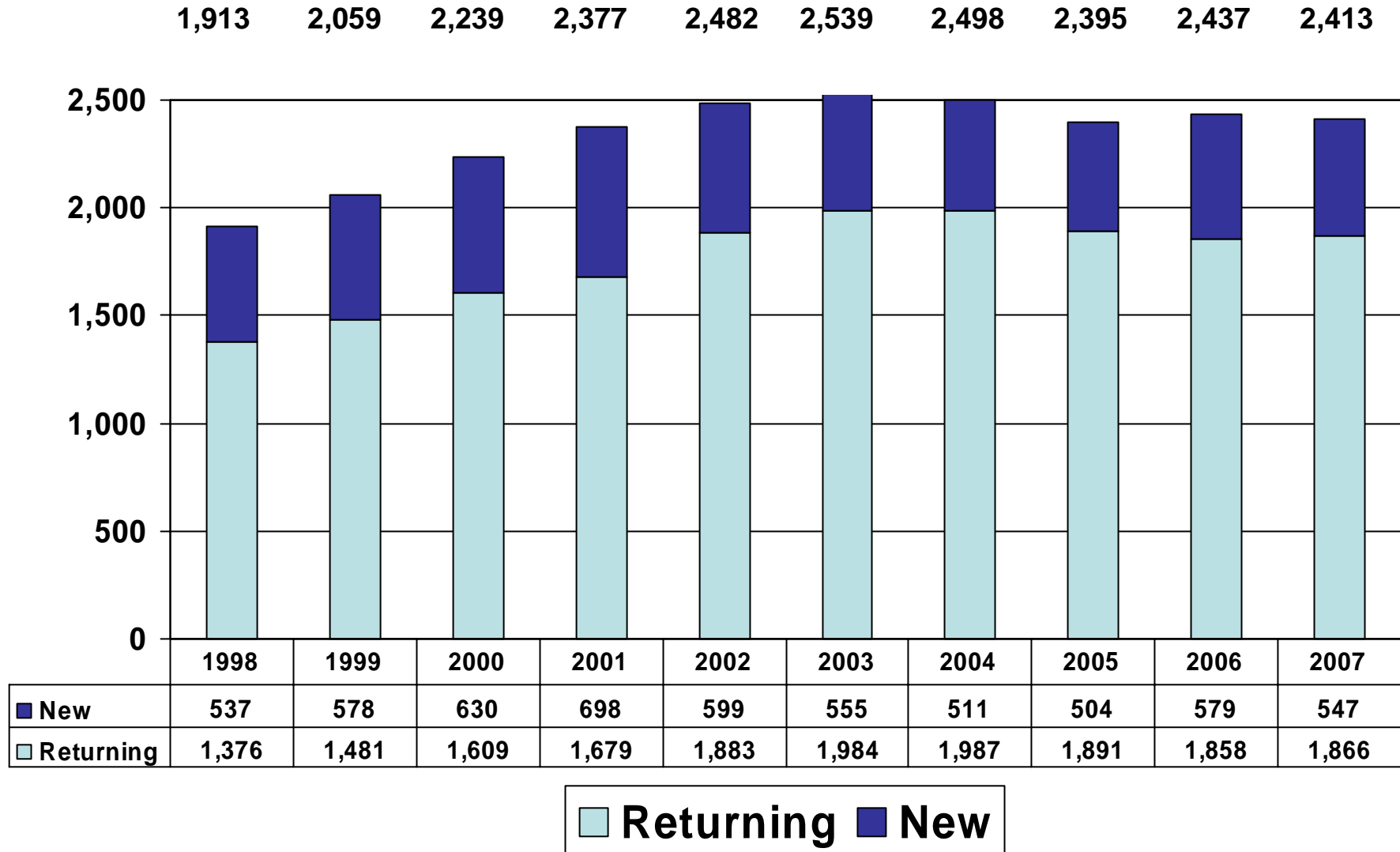


Table 5. International Graduate Students (New and Total University) – Top 5 Countries

Graduate Admissions Analysis												
Total University International Enrollments												
Top Five Countries												
Official Enrollment File											#	%
	Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Change	Change
International Students												
New Students	537	578	630	698	599	555	511	504	579	547	-32	-5.53%
Total Students	1,913	2,059	2,239	2,377	2,482	2,539	2,498	2,395	2,437	2,413	-24	-0.98%
China												
New Students	142	149	154	161	128	144	127	117	152	164	12	7.89%
Total Students	435	497	527	559	583	630	638	625	640	663	23	3.59%
India												
New Students	84	127	151	178	153	122	111	112	153	146	-7	-4.58%
Total Students	265	315	405	454	517	558	529	489	547	581	34	6.22%
Korea												
New Students	60	54	58	91	83	69	54	55	76	65	-11	-14.47%
Total Students	222	236	261	303	332	336	321	305	308	296	-12	-3.90%
Taiwan												
New Students	38	32	34	42	53	41	33	41	45	29	-16	-35.56%
Total Students	158	157	154	154	188	182	172	169	171	157	-14	-8.19%
Turkey												
New Students	20	10	18	13	19	19	14	18	4	9	5	125.00%
Total Students	97	98	96	89	93	98	102	104	86	69	-17	-19.77%

Table 6. 'New to University' Graduate Applications - Total University Calendar Year

	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		% Change (2007 vs. 2006)
		%		%		%		%		%		%		%		%		%		%	
Domestic	6,812	54	6,649	48	6,608	46	6,533	45	7,528	45	8,691	48	8,590	57	9,290	60	10,086	58	10,680	58	5.89%
International	5,751	46	7,106	52	7,805	54	8,109	55	9,242	55	9,455	52	6,408	43	6,258	40	7,237	42	7,753	42	7.13%
Total	12,563		13,755		14,413		14,642		16,770		18,146		14,998		15,548		17,323		18,433		6.41%

**Table 7. Council of Graduate Schools
2007 International Graduate Admissions Survey III**

Penn State University

The following report compares your institution's responses to the International Graduate Admissions Survey III with the overall results from other CGS members (any question that was left blank or that we were unable to interpret appears as a blank below). A total of 172 CGS members responded in time to be included in the analysis.

Selected Qualitative Questions

1. Graduate schools use a variety of systems and processes to coordinate international recruitment. This year, CGS would like to begin to document these systems. Does your institution have a centralized process for recruiting prospective international graduate students?

Your Institution Responded: No

Overall Distribution of Responses: Yes: 37% No/Unknown: 57%

2. How is international student recruiting funded at your institution? (Select all that may apply.)

Your Institution Responded: Graduate School, Campus International Office/Dept, Central College/University Administration

Overall Distribution of Responses: Graduate School: 43%
Campus International Office/Dept.: 38% Central College/University Administration: 30%
Other: 36% Unknown: 3%

Change in International Admissions and Enrollment Patterns: 2006 to 2007

	<u>Your Institution</u>			<u>Overall Results</u>		
	Admits	First-time Enrollment	Total Enrollment	Admits	First-time Enrollment	Total Enrollment
Total International	-6%	-2%	0%	7%	4%	7%
Country of Origin						
China	7%	13%	5%	24%	19%	15%
India	-10%	-2%	8%	9%	8%	14%
Korea	-15%	-14%	-3%	-3%	3%	2%
Middle East	7%	22%	-9%	4%	12%	5%
Field of Study						
Business	-3%	2%	1%	4%	12%	10%
Education	-22%	-28%	-7%	-8%	-6%	-2%
Engineering	-15%	-12%	2%	5%	8%	8%
Humanities	21%	6%	-6%	3%	4%	1%
Life Sciences	-1%	16%	1%	4%	6%	3%
Physical Sciences	-11%	-5%	0%	-10%	2%	0%
Social Sciences	31%	-3%	-3%	-1%	-1%	1%

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Comparison over the last decade shows changes in graduate program selectivity and yield. In 1998, 46% of all applicants to master's degree programs were offered admission, and in 2007, that number dropped to 37% (Figure 3). In 1998, 49% of all master's degree applicants who were offered admission enrolled at the University; in 2007, the yield was 48%, having reached a peak of 53% in 2005 (Figure 3). In 1998, 32% of doctoral applicants received offers, compared with 22% in 2007 (Figure 4). Enrollments resulting from offers made to doctoral applicants were weaker than for master's students; in 1998 and 2007 the yields were 41% and 45%, respectively (Figure 4). In the intervening years, yields actually reached 49% in 2004 (Figure 4). There is tremendous variation in offers and yields on a program by program basis.

Number of degrees conferred necessarily lags behind enrollment. As such, in 2006-2007 Penn State conferred the highest number of doctoral degrees in ten years; master's degree conferrals declined from their peak in 2003-2004 (Table 8).

A summary of general observations is as follows:

- **We have lost total graduate student enrollment share.**
- **This loss is reflective of loss of master's degree students.**
- **The total number of African American students has declined.**
- **The total number of international students has declined.**
- **We have become more selective in admission of graduate students and more successful in recruiting doctoral students.**

II. Addressing the Issues

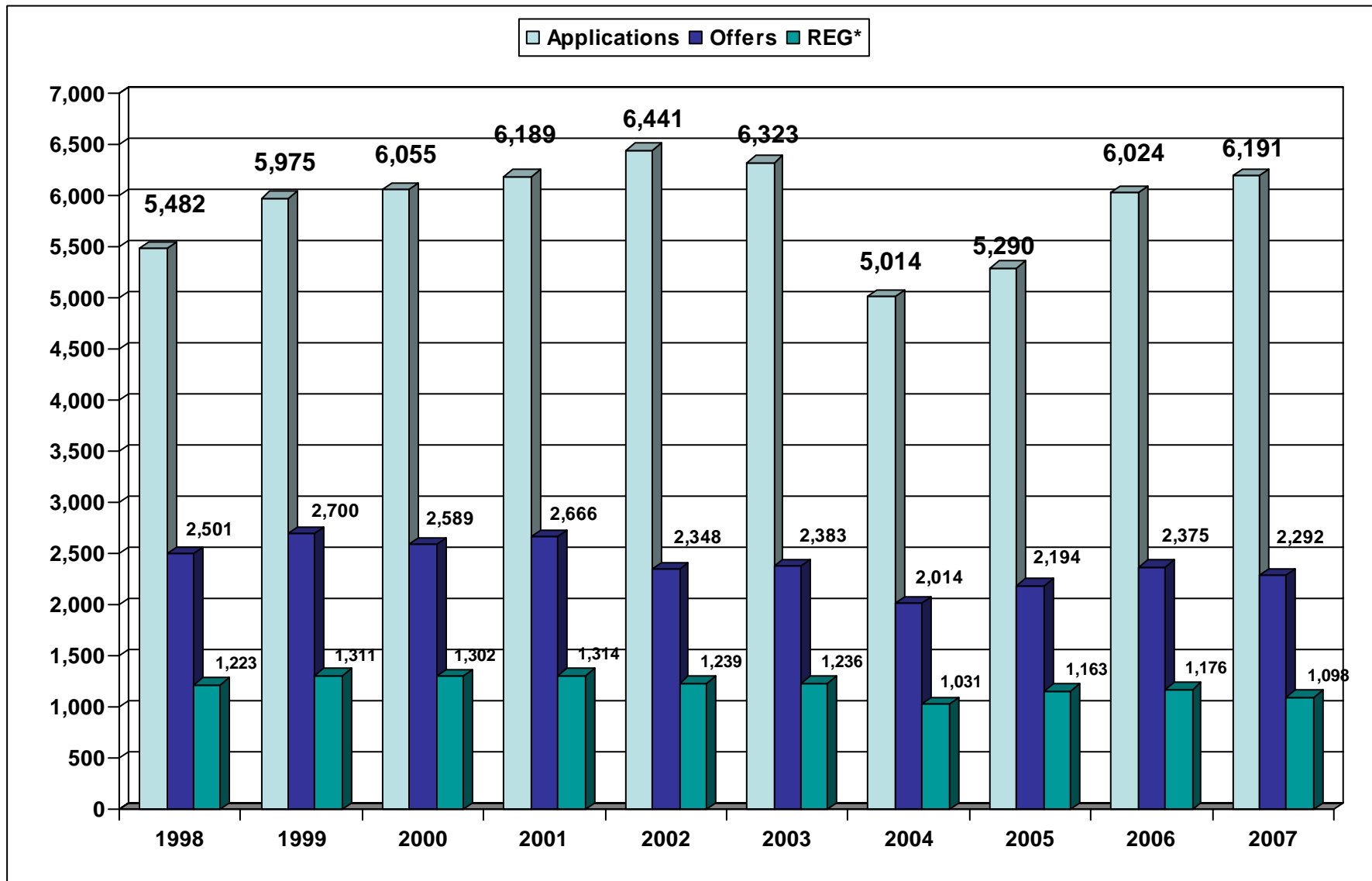
In this section, we will pose three questions that are central to graduate education at Penn State.

Question One: Is the quality of graduate education at Penn State where it should be?

Are we positioned to maintain excellence?

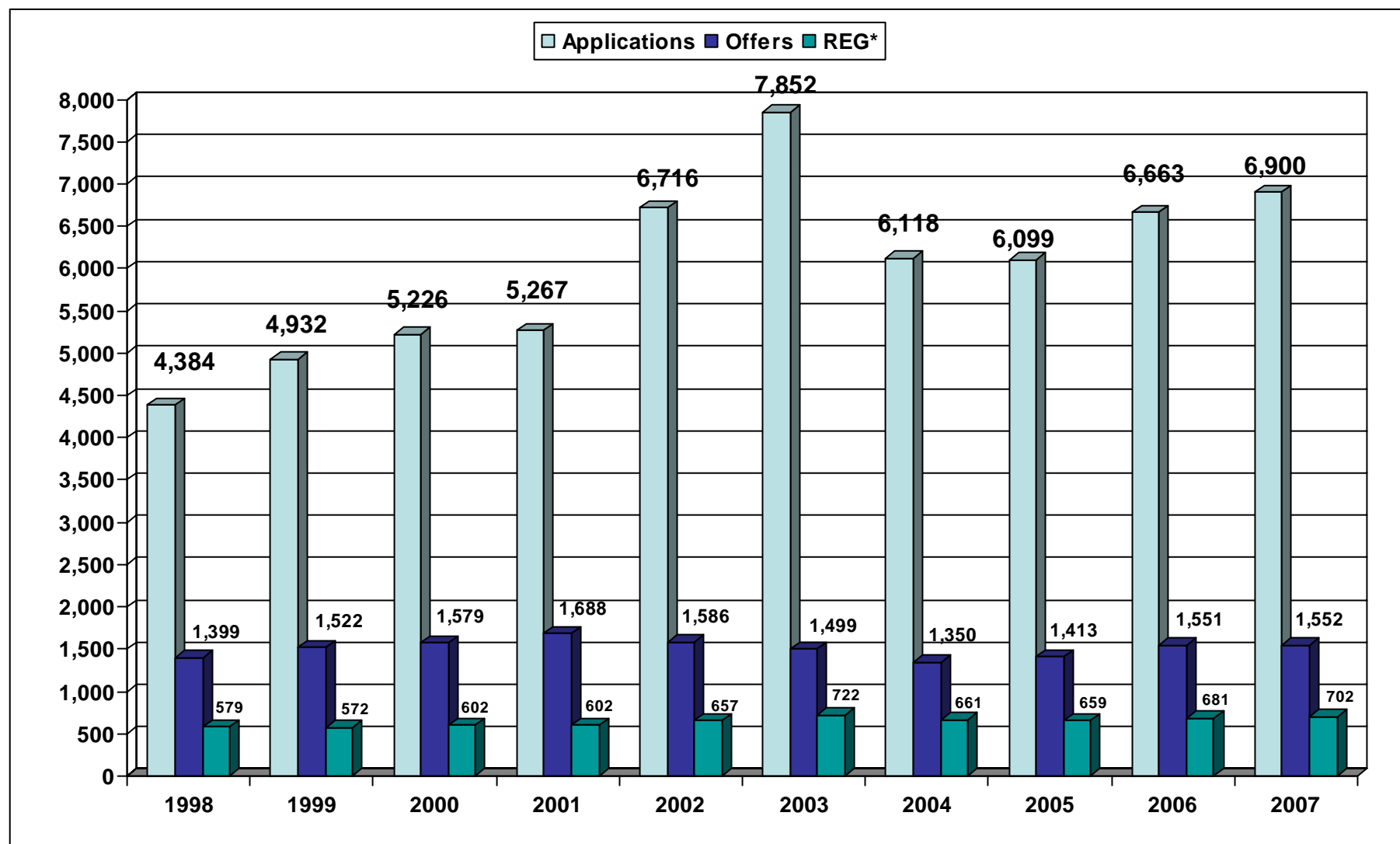
Program Review - The quality of doctoral programs represents the lifeblood of a research university. A number of years ago, the Graduate School initiated internal review of all graduate programs. Every few years, we collect data for programs that allow us to review size of programs, placement of students, time to degree, as well as indicators of student quality, through measures including GPA and GRE scores at the time students are recruited. We have not conducted a review in the last two years, because of the time and effort demanded of selected programs reviewed by the National Research Council (NRC) as part of their periodic survey. What we have learned in the past is that most of our programs lie within a satisfactory zone. The largest problem we see is that many of our programs are rather small. The challenge to the faculty is to deliver a quality program if the student number is relatively low. In the case of small programs, it often becomes difficult to offer all the courses students expect when they enroll and student-student interactions are below a critical threshold. There are several reasons that student numbers may be low: insufficient resources to support students; multiple graduate programs that overlap in content or context, thus creating internal competition for student numbers; a weaker overall program based upon faculty reputation. The latter problem is beyond

Figure 3. Graduate Applications, Offers and REG*--New to University MASTER'S



% Offers / Appls	45.62%	45.19%	42.76%	43.08%	36.45%	37.69%	40.17%	41.47%	39.43%	37.02%
% REG* / Offers	48.90%	48.56%	50.29%	49.29%	52.77%	51.87%	51.19%	53.01%	49.52%	47.91%

Figure 4. Graduate Applications, Offers and REG*--New to University DOCTORATE.



% Offers / Appls	31.91%	30.86%	30.21%	32.05%	23.62%	19.09%	22.07%	23.17%	23.28%	22.49%
% REG* / Offers	41.39%	37.58%	38.13%	35.66%	41.42%	48.17%	48.96%	46.64%	43.91%	45.23%

Table 8. Graduate Degrees Conferred by Academic Year - Total University.

	1997 - 98	1998 - 99	1999 - 00	2000 - 01	2001 - 02	2002 - 03	2003 - 04	2004-05	2005-06	2006-07
Doctoral Degrees										
University Park	571	560	511	520	519	503	539	571	646	646
Other Campuses	22	21	31	21	22	47	41	35	28	39
Total	593	581	542	541	541	550	580	606	674	685
Master's Degrees										
University Park	1,257	1,209	1,163	1,166	1,107	1,079	1,252	1,191	1,150	1,127
Other Campuses	777	743	850	796	1,016	1,022	1,041	954	939	966
Total	2,034	1,952	2,013	1,962	2,123	2,101	2,293	2,145	2,089	2,093
University Total	2,627	2,533	2,555	2,503	2,664	2,651	2,873	2,751	2,763	2,778

the scope of the Graduate School, so we will focus on the first two areas for which we will suggest opportunities.

Future reviews will begin by generating metric data for all graduate programs. Programs will be requested to review their metrics for accuracy and to provide any qualifications or corrections, with explanations as necessary, as well as provide student placement data to complement these metrics. These data will then be reviewed within the Graduate School without consuming program faculty and college administrator's time in terms of assessment by these entities. Measures of retention/attrition will be monitored by the Graduate School as an additional indirect indicator of program quality and success.

When the Graduate School identifies graduate programs with potential problems, the associate deans will be advised of the concerns and will be invited to provide additional relevant material. The Graduate School will engage in a dialogue with the deans and associate deans to determine the magnitude of the problem and potential solutions. Depending upon the concerns, the college dean may be asked to conduct an external review of targeted programs.

Graduate programs will still be encouraged to collect data that are relevant to and necessary for external assessments and rankings, and to further utilize data to enhance program marketing; training grant procurement; alumni cultivation in the interest of fundraising and potentially enhancing new student recruitment; and other benefits.

Student support - Penn State's finest programs are challenged every year as faculty develop offers that are sufficient to capture the best and brightest graduate student prospects. Students in many disciplinary fields expect offers that are multi-year, preferably five years in duration; students would like fellowships rather than assistantships; and the dollar amount counts. The University has precious few full fellowships. Several years ago we developed the Distinguished Graduate Fellowship (DGF). Such a fellowship is created when a donor provides \$250,000 in principal, the income from which is matched with one semester of University Graduate Fellowship (UGF) and one semester of tuition provided by the college. The goal is to double the number of fellowships from 80 UGFs to 160 DGFs. This product seems to be attractive to donors and to date, pledges and fulfilled commitments have been made to establish 16 DGFs, with 8 additional prospective DGFs under discussion.

Increased fellowship support for graduate education can also benefit from the collaborative efforts of the Graduate School's Directors of Development, Fellowships and Awards, and Alumni and Public Relations, respectively. The Fellowships Office is a key point of origination for recognition of new and continuing students who will become alumni and future prospects. The Fellowships Office will target select populations of students (e.g., UGF/DGF recipients) for special events at key points in their programs, and collaborate with the Alumni and Development Offices to integrate relevant alumni (e.g., prior UGF/DGF recipients) into these events, so that the possibilities for both reconnecting with alumni and cultivating donors for the future are optimized.

Training grants provide another rich source of fellowships and assistantships. Penn State has not been very successful in securing training grants, particularly from NIH, which has the largest such program among the federal agencies. There are currently 6 NIH Training Grants for graduate education at University Park and 1 at Hershey in the College of Medicine. Foundations

are another potential source of fellowships. We have worked with a number of foundations, but we need to be more systematic in going after such support. In the next five years, the Office of Graduate Fellowships and Awards Administration will work with the Office of Corporate and Foundation Relations to identify those foundations that might be receptive to proposals for graduate fellowships, and then initiate a dialogue directed at securing graduate student support. Lastly, there are opportunities for students to win fellowship support directly from federal agencies. A few years ago, the Graduate School developed an incentive program to encourage students to apply for these fellowships. Since the program was initiated, 39 students who received Incentive Awards have applied for NSF fellowships and 8 of these have been successful. We need to engage faculty in encouraging their students to compete for these funds; success is not only a guarantee of excellent support, but also a valuable professional experience.

The following are recommendations to enhance student support. These recommendations will be supported by the Graduate School, but in reality, it is the colleges and their faculty who hold the keys to implementing these recommendations:

- 1. In the next five years, bring in at least 35 additional new Distinguished Graduate Fellowships through college development efforts.**
- 2. Advance programming for current graduate students and alumni with fundraising as one goal, and cultivate tomorrow's donors as another.**
- 3. Explore opportunities for fellowship programs with foundations. This is a step that can be partnered between the colleges and the Graduate School (and the Research Office as appropriate).**
- 4. Target a high concentration of NSF Incentive Awards in specific colleges and in high quality programs committed to this effort, whose faculty will work with students to develop competitive applications. As a result of this effort, Penn State should see an increase of 15 new NSF Fellowships above the historical level of 6-8 new awards over the next five-year period.**

Program supplementation - For many years, the notion existed that doctoral education was intended largely to prepare students to work in the academy. While that is still largely true in some fields, it is certainly somewhat illusory. In some fields, the number of doctoral students exceeds the academic opportunities, and in other fields, the needs beyond the academy for these highly educated individuals are great. In both instances, the academy has an obligation to make students aware of alternative careers and to provide them with skills to meet the related challenges.

The Graduate School, in collaboration with the Graduate School Alumni Society, will sponsor an annual workshop on alternative careers. This program will build on the highly successful workshop titled "The Academy Is Not the Only Option" offered November 10, 2007 by the two entities. The program was attended by 165 doctoral students, with 180 registrants remaining on the wait-list when the capacity was reached. Twenty eight doctoral alumni interacted with the attendees in small groups, and in one-on-one situations. Next year's plan calls for expanding the event to facilitate more networking between the alumni and the attendees.

In collaboration with the colleges, the Graduate School will seek to enhance graduate students' professional preparation for nonacademic career trajectories by providing a portfolio of certificate programs. The certificates in the portfolio will be available to all graduate students, with doctoral students being the primary audience. The certificates will consist of nine to twelve

credits and be delivered in an online or blended medium. Possible certificate topics include: entrepreneurialism, administrative leadership, project management, global awareness, and intellectual property. Availability of this type of complementary education will be another distinguishing characteristic of Penn State graduate education when programs are recruiting graduate students.

The Graduate School, in collaboration with the Graduate School Alumni Society, will sponsor an annual workshop on developing soft skills. Students anticipating employment in a nonacademic environment will need professional development opportunities to improve their communication and interviewing skills, to craft résumés and utilize tools such as e-Portfolios to market themselves, and to learn the value of, as well as practice, strategic networking.

Interdisciplinary Graduate Education – *Is Penn State offering the graduate degree programming students want and need?*

There is broad recognition that solutions to major research problems are tackled through the lens of multiple disciplines, and so it is not surprising that students gravitate towards graduate degree programs that are interdisciplinary in nature. Faculty responding to these needs and interests are often keen to develop interdisciplinary graduate degree programs. But this is almost always done without resolving the continued role of existing disciplinary-based programs. Recognizing that we cannot continue to spin off more and more graduate programs without diluting resources and the quality of some of our programs, a task force was formed to examine different models for conducting interdisciplinary graduate education at Penn State. The task force report can be found at the following url: <http://forms.gradsch.psu.edu/memos/tf rptIdGrEdForACGE.pdf>. The Executive Summary appears in Appendix A.

The seminal features of strong interdisciplinary programs include the ability to address complex and novel/important problems; create faculty/department/college synergies and collaborations; build on institutional strengths; attract strong students; provide students with an avenue to satisfy a diversity of professional career interests; provide value-added scholarship for the students; and allow for flexibility in terms of multiple sources of student entry and exit/placement.

Penn State has a number (18) of Intercollege Graduate Degree Programs (IGDPs). These programs are popular with students, based upon relatively high enrollments compared to many of the discipline-based/departmentally anchored programs. However, because resources are tied to departments in colleges, the IGDPs suffer from limited resources, both financial support for students and faculty time. Thus, there is a disconnect between what students want and what the University can readily provide. This problem is not unique to Penn State, but reflects a conundrum for most Universities. The task force looked at models from a number of benchmark institutions and found no silver bullets. The group concluded that one model already employed by Penn State seemed to provide the greatest opportunity to enhance interdisciplinarity in graduate education, while being the least disruptive to the resource base of the institution viz. the dual title degree. The following is a quote from the report that captures the value of this approach.

“In contrast to the stand-alone graduate program (departmental or intercollege), the dual-title degree is a unique model that not only allows the student to receive value-added

training in another field that is reflected in specialized coursework, but ensures the additional field is integrated into the research problem and thesis/dissertation to provide for truly interdisciplinary training. Because students must be enrolled in a primary program before admission into a dual-title field, they are anchored to an academic unit that generally provides physical and administrative assets (e.g., office space, computer access, staff assistance) and financial support, but ultimately pursue both degrees simultaneously and in a truly integrated fashion. The student receives a single diploma titled in both fields of study, and is acknowledged to have the degree in both areas. Importantly, unit leaders and primary program heads do not feel the dual-title program competes with departmental programs, and both are equally and fully credited for the training they provide to the student. For these reasons, the dual title degree is viewed as an excellent approach that is underutilized and not well recognized.”

Recommendations that flow from this report include:

- 1. Promote the development of dual-title graduate degree programs.**
- 2. Reduce the development of new, stand-alone intercollege graduate degree programs in favor of dual-title degrees.**
- 3. Consider the conversion of existing IGDPs to dual-title graduate degree programs.**
- 4. Explore college-based and possibly institute-based resource plans that could support dual-title graduate degree programs.**

Question Two: Are there opportunities we are missing?

Professional Master’s

As we see from the data referenced earlier in this document, the number of master’s degree students has declined at Penn State. Nationally, however, there is a widely held view that professional master’s degrees are becoming an increasingly important element in workforce preparation. Professional master’s degrees are taught in a number of venues, full time and part-time resident instruction, and through online learning. In order to develop a better understanding of what professional master’s degree opportunities Penn State should be seeking, a task force was appointed to address the issue. The full text of the report can be found at url: <http://forms.gradsch.psu.edu/memos/srptProfMstr.pdf>. The Executive Summary appears in Appendix B.

Penn State currently offers 83 professional master’s degree programs at four academic campus locations and the World Campus. Eleven new programs are currently under development. As can be seen in Table 1 at the beginning of this document, half of all master’s degree students are enrolled in professional master’s degrees.

The recommendations below stem from the task force report, and are endorsed by this strategic plan.

- 1. Successful professional master’s degree programs should be promoted.**
- 2. Weak professional master’s degree programs, as defined by low enrollment, should be targeted for closure.**
- 3. As appropriate, resident and online professional master’s degrees should be promoted.**

- a. **Penn State Great Valley and Penn State Harrisburg are encouraged to explore integrated undergraduate-graduate (I.U.G.) B.S.-M.S. programs in coordination with geographically amenable Penn State campuses.**
 - b. **Penn State Great Valley and Penn State Harrisburg are encouraged to expand professional master's degree programs through blended resident education and online approaches.**
4. **Selected professional master's degrees should be actively marketed to self-funded international students. (See Appendix B.)**
 5. **For colleges at University Park, professional master's degrees offer an opportunity and a financial challenge. It is recommended that a budget model be developed that allows for revenue sharing to occur if resident professional master's programs yield student numbers in excess of a baseline student population.**

As with the sustainability of any quality graduate program, professional master's programs, independent of the mode of delivery, require the backing and involvement of strong academic units and their faculties. The choice of which professional master's programs should be developed in the future should be assessed based upon the viability and quality of the existing graduate program(s) supported by the sponsoring unit. Clearly, the stronger programs should lead the way in any systematic effort to expose the University to more professional master's programs.

Towards the last objective above, both undergraduate and university-supported graduate student enrollments must be included in any metric for determining the amount of tuition revenue to be shared with resident professional master's programs. Certain assumptions would be required when creating such a metric. For example, one assumption would anticipate potential declines in undergraduate as well as university-funded graduate enrollments, most likely measured in tuition dollars. This assumption would then be related to three factors, or variables, that should be included in a formula for determining the amount of tuition revenue generated by a resident professional master's program, to be shared with the sponsoring unit. First, an average of undergraduate and university-funded graduate enrollments measured in tuition dollars should be used as a benchmark. This benchmark factor could be a five-year rolling average, for example. Second, a formula must contain a measure of the previous year's enrollments of undergraduate and university-paid graduate students. This factor will be the deciding variable of relative net gains or losses against the benchmark average. Third, the formula must involve the percentage of the net revenue to be shared. For example, assuming no loss in either undergraduate or university-funded graduate enrollments, the tuition generated from the addition of a professional master's program would then be shared by some prearranged percentage. At some point in time and depending on the percent decline in enrollments of undergraduates or university-funded graduate students, no tuition revenue would be shared.

Internationalization of Graduate Education

To date, notions of internationalization of graduate education are most easily highlighted by the large number of international graduate students hosted within Penn State programs. While the insertion of these students into our programs certainly contributes to expanding the horizons of the entire student population, and more comprehensively has contributed to enriching the workforce in the U.S., the challenges to really globalizing our approach have not been

systematically addressed. A task force was appointed, in a collaborative effort between the offices of the Senior Vice President for Research and Dean of the Graduate School and the Vice Provost for International Programs, to look at how the University should approach graduate education and research from a global standpoint. The relevant portion of this report related to graduate education can be accessed at the following url: <http://forms.gradsch.psu.edu/memos/tfrptGRGEGForACGE.pdf>. The Executive Summary appears in Appendix C.

The challenge to creating an international component to graduate education centers, in large measure, around the nature of student support. Students that are supported with research grants and contracts are central to the successful execution of these activities. Thus, faculty, especially in the sciences, consider their research somewhat compromised if students were to leave for protracted periods of time. Despite this clear challenge, it is imperative that we develop program models that offer and promote international opportunities in the context of research and scholarship, because the world in which our students will spend their careers will be greatly influenced by what happens and how it is done far from our shores.

The following recommendations stem from the task force report and are endorsed by this strategic plan:

- 1. Development of concurrent degree programs as one mechanism for global partnerships between Penn State and universities outside the U.S. The Graduate School should assist graduate programs interested in establishing such relationships.**
- 2. Development of integrated baccalaureate/master's and master's/doctoral programs between Penn State and partner institutions outside the U.S., to establish a pipeline of students and a nucleus of focused activity and to allow students from the reciprocal institutions to benefit academically from residency at the partner institutions.**
- 5. Development of certificate programs between Penn State and partner institutions outside the U.S.**
- 6. Development of online learning to afford students from Penn State and its international partners the opportunity to share academic opportunities.**
- 7. Encourage graduate programs to reconsider use of foreign language acquisition to meet the communications requirement of doctoral education at Penn State.**

Strategic and timely pursuit of partner institutions will be essential for achieving success in the first three of the above goals. Institutions that are among the very top 2-3 in a given country in fields of study that reflect Penn State's graduate program strengths will have already been saturated with contacts and have established relationships, so that the opportunities for new partnerships will be nominal. Alternatively, institutions that are slightly below these very top few, but still among the top ten in that country and that have not been approached by large numbers of competing institutions, should be considered for seeking out partnerships in the very near future to ensure these important opportunities are captured.

Question Three: Are graduate student demographics what they should be?

Diversification of the Graduate Student Body

As we discussed earlier, we are beginning to see an increase in the numbers of Hispanic graduate students; however, the absolute number of African American students is lower than in previous years, and the percent of the total graduate student body is unchanged. This outcome is simply unacceptable when we live in a society that is becoming more diverse. In general, numbers of African American graduate students at Penn State are lowest in STEM fields, versus the social sciences and other non-technical fields. This is generally reflected in enrollments in degree programs by college, where African American students as a percentage of total new enrollments for 2007 were 1.4%, 2% and 0% in the colleges of Engineering, Science, and Agricultural Sciences, respectively, versus 10% in Communications, 9% in Business, 5.6% in the Liberal Arts, and 5.4% in Education. An interesting contrast is the College of Earth and Mineral Sciences, with graduate programs in engineering and science disciplines that have succeeded in recruiting 4.8% African American students.

The Graduate School has worked with colleges and multicultural directors to try and develop a pipeline of graduate students through a variety of summer research opportunity programs; through targeted recruiting; and through development of inter-institutional relationships. The Graduate School has also worked hard at creating a supportive environment to insure that time to degree (TTD) and graduation rates are as good, or better, than the mean for the majority population. The latter efforts have been extremely successful. Students from underrepresented groups complete doctoral programs in a shorter average TTD of 5.42 years, and the equivalent median TTD of 4.94 years across all disciplines, versus majority students who complete with an average TTD of 5.71 years, and a median TTD of 4.94 years. Doctoral attrition rates for the five-year period from 2001/02-2005/06 across all fields assessed in the recent NRC Assessment of Research Doctorate Programs were similar for underrepresented versus majority students in terms of the percentage of students who entered a doctoral program and left without a degree (3.6% versus 3.5%, respectively), as well as for the percentage of students who entered a doctoral program and left with a master's degree (7.9% versus 8.3%). These data tell us that the students we recruit are competitive and, if we can bring them to Penn State, they will be successful. The challenge is getting the students to enroll.

The center piece of our pipeline effort is the Summer Research Opportunity Program (SROP) that we conduct in collaboration with other Committee on Institutional Cooperation (CIC) institutions. The statistics of success are not what we would hope. In the years 1992-2007, 460 students participated; of those students, 48 ultimately earned graduate degrees from Penn State and 32 students are currently attending our graduate programs. There are a number of areas in which we have the potential to improve our yield. We must focus almost exclusively on recruiting rising seniors who are ready intellectually and psychologically to commit to graduate school at Penn State. We must engage faculty in the selection of prospective SROP students with the intent of trying them out for graduate school at Penn State. The program is far too expensive to simply view hosting a student as an act of good citizenship that will groom them for graduate or professional school "some place." With these two objectives in mind, we should work towards enrolling no fewer than 50% of the SROP students on an annual basis.

The track record for enrolling SROP students from other CIC institutions into graduate school at Penn State has been less than impressive. A total of only eleven scholars who attended SROP at other CIC institutions have reported Penn State as their graduate school. This does bring into question the value of continued participation in the SROP conference. It is certainly valuable for our SROP students to present their research and to participate in a large poster exhibition. The Graduate School should consider engaging our SROP students in mandatory

participation in the McNair conference held at University Park each summer. This conference has students from all over the country, and is sufficiently large to provide a similar experience at a much lower cost. Furthermore, it would provide Penn State graduate faculty with another opportunity to view the progress of the SROP students and to begin the recruitment process.

Over the years we have carefully refined our recruitment plans, considering which conferences, fairs and institutions we will visit to find prospective graduate students. Some events have been removed from our travel schedule because the events were not carefully planned, had low attendance, or just did not yield the student interest we were seeking. Some events have been added if they come with strong support from other recruiters, faculty members or national agencies. We will continue to monitor our successes and failures at all events. In addition, we have partnerships with several minority serving institutions such as the University of Puerto Rico, Hampton University, Jackson State University, Florida A&M University and others, and we will continue to work with the academic colleges to capitalize on these partnerships.

A second pipeline program which is hosted by the Graduate School is the McNair Scholars program. This program is designed to interest first-generation college attendees in graduate school opportunities. A recent Department of Education study entitled *Education and Employment Outcomes of the Ronald E. McNair Post Baccalaureate Achievement Program Alumni* reported data on McNair participants enrolled in their programs for the period from 1989 through 2000. These data were collected in 2006. These are national data and do not address individual participating schools. Of the students enrolled in the program between 1989 and 1993, 14.4% reportedly had earned doctorates, and 3.9% of participants in the program between 1994 and 1998 reported having earned doctoral degrees. None of the participants in the program between 1999 and 2003 indicated that they had earned doctoral degrees. This report gave no data indicating how many students earned bachelor's degrees overall, or had applied and enrolled in graduate school (McNair focuses on doctoral study). For Penn State's McNair program, of students enrolled in the program between 1991 and 1993, 21% (4 of 19 alumni) reportedly had earned doctorates, and 18.4% of participants in the program between 1994 and 1998 (9 of 49 alumni) reported having earned doctoral degrees. Of the participants in the program between 1999 and 2003, 12.5% (8 of 64 alumni) indicated that they had earned doctoral degrees. (Note - the program was first funded at Penn State in 1991, so there are no numbers to report between 1989 and 1991.)

More recent data on the Department of Education Web site for the most recent cohorts report the number of McNair participants who graduated over a three-year period and how many enrolled in graduate school. These data are probably more useful in helping Penn State establish a baseline from which to determine our targeted figures at Penn State. The data sources used for calculating the graduate school enrollment rates below are the *2003-04, 2004-05, and 2005-06 McNair Annual Performance Reports (APRs)* submitted by grantees:

Academic Year	2003-04	2004-05	2005-06
No. of BA Recipients in Cohort	2,109	2,151	2,188
No. of BA Recipients Enrolling in Graduate School in 2004-05	1,198	1,209	1,245
Graduate School Enrollment Rate 2004-05	56.8%	56.2%	56.9%
No. of Penn State BA Recipients in Cohort	14	15	6

No. of Penn State BA Recipients Enrolling in Graduate School in 2004-05	11	9	4
PSU Graduate School Enrollment Rate 2004-05	78.6%	60%	66.7%

Based on this more current information, it appears that on average, over the latest three-year reporting period, approximately 2,150 McNair students earn their bachelor's degrees annually, with 56.6% enrolling in graduate school the following fall after their graduation. Penn State could realistically target at least 50 McNair graduates each academic year who would be recruited to apply to Penn State for the fall after their graduation. Of this group, we would then hope to enroll at least 25 for a 50% enrollment rate. Since past data on actual numbers of McNair graduates from across the country who apply and enroll at Penn State have not been collected, this target number seems reasonable to start with as a base. Penn State presently has no formal method to count how many McNair scholars have applied and been accepted to date. The new graduate application, however, will ask McNair students to identify themselves, thereby giving Penn State the opportunity to collect data on applications and enrollments for this group of scholars. As data is collected on Penn State's efforts to actually enroll McNair graduates, increases in initial targets could be considered.

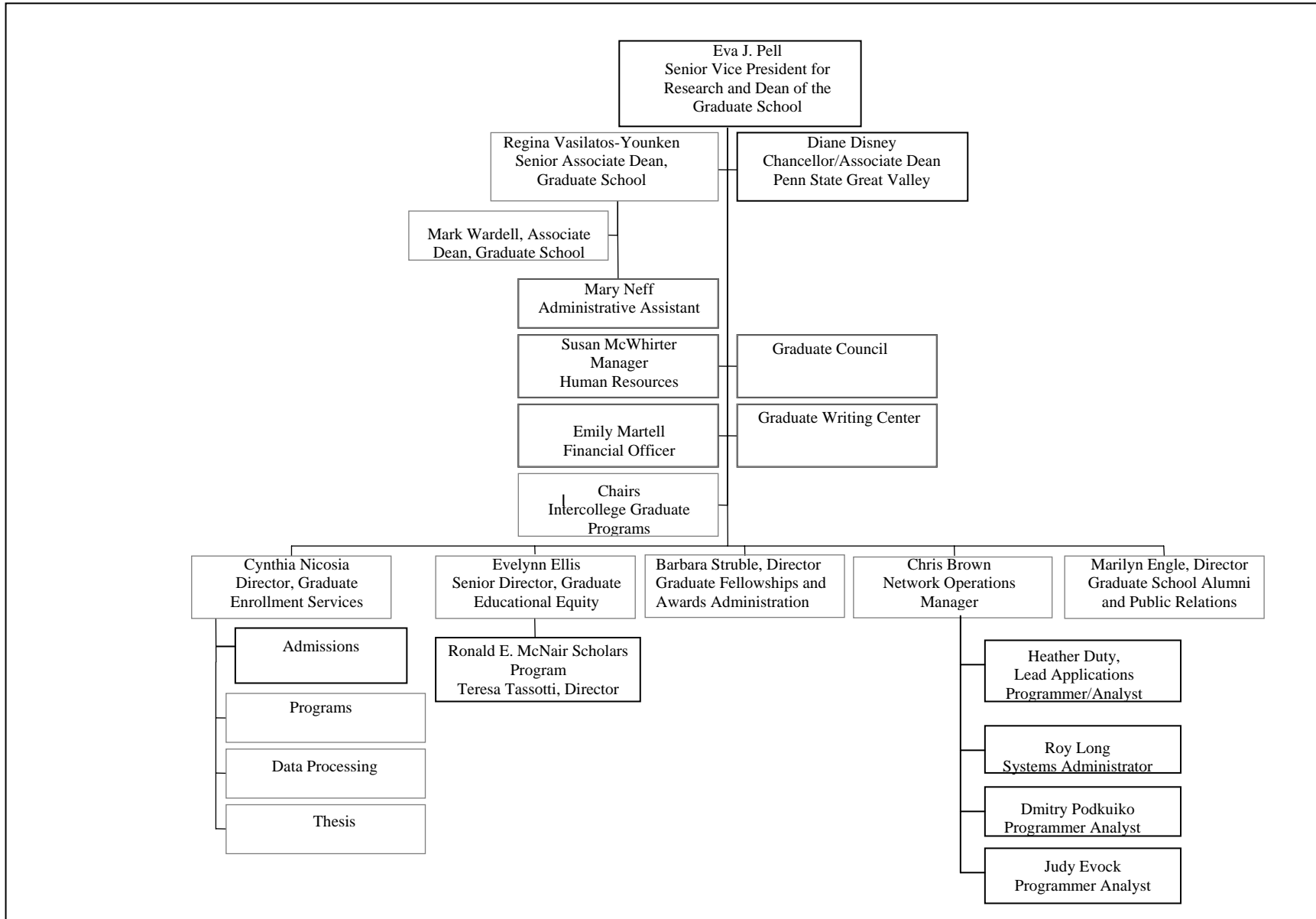
Based upon all of the above, our recommended goals to improve our success in enrolling and graduating students from underrepresented groups include:

- 1. Continue to work with college faculty to recognize their role in helping to insure that SROP students are being selected, because they are serious graduate applicant prospects.**
- 2. Through prudent selection of SROP students, strive to entice 75% of these individuals to apply to Penn State for graduate school, with the goal of 50% of the SROP student pool eventually enrolling in graduate school at Penn State.**
- 3. Given the data from the national report on graduate participation for McNair students, Penn State's baseline number for McNair applications will start at 50 applicants. Of this group, we hope to enroll 20-25 McNair alums from programs throughout the country.**

III. Graduate School – Service Component

The Graduate School forms the overarching entity that supports the colleges, and in some cases the faculty across colleges, in delivering high quality education at Penn State. The organization of the Graduate School is described in Figure 5. The Graduate School has administrative responsibility for the processes involved in admission, matriculation and graduation of all graduate degree and non-degree students across the University. This responsibility is supported by a variety of departments which monitor, execute and promote enrollment processes, data processing, alumni and public relations, and fellowships and awards, and which promote a supportive and welcoming environment for all students. Graduate Council forms the arm of the Faculty Senate that provides faculty governance, approves curriculum, etc. The Graduate School coordinates its goals by working closely with the associate deans who form an advisory committee to the dean of the Graduate School.

Figure 5: Graduate School Organizational Chart



IT Support and Data Management –

Network Operations provides the backbone for the service dimension of the Graduate School. There will always be a continuum of projects necessary to keep the Graduate School current, and to provide expected service to academic units and to students. Ongoing projects include the following:

The management and updating of systems for compliance with Information Privacy and Security (IPAS) guidelines provides the mandated data security requirements for management of sensitive University data. The IPAS requirements for credit card transactions have already been implemented. Phase II requirements, which will mandate the security of ALL data elements at the University, is due out this spring. Compliance with IPAS Phase II is being analyzed and we are purchasing the equipment required.

Compliance with the Payment Card Industry Data Security Standards (PCIDSS) has become a major initiative at Penn State. All departments that process credit card transactions, either online or in-person, are required to meet very strict criteria for the security of the payee's data. The server architecture must comply with security standards and is subject to random scans by the compliance vendor. Logging of all transactions will be a major compliance standard, as will the physical security of the servers.

We are currently re-designing the Graduate School Online Admissions Application to provide additional features, like the ability to upload documents and to notify references electronically and receive reference letters digitally. We are working with staff from Outreach, the World Campus and the MBA programs to design a system that will seamlessly integrate with their existing Customer Relationship Management systems (Hobsons and Embark).

The Graduate School's Disaster Recovery efforts are being implemented as the training is made available. We have sections of a Disaster Recovery Plan documented on an internal Web site and implemented where feasible. This will be a long process, but we have the Disaster Recovery Plan for all computing requirements currently in place.

The Graduate School is evaluating the utility of the University-purchased Knowledge Base. Users can enter questions and receive intelligent responses based on the search algorithm. This initiative would reduce the number of repetitive phone calls and answer most of the common questions from a variety of constituents, including current students, program staff and faculty, as well as prospective students.

Enrollment Management –

Graduate Enrollment Services continues to develop and refine electronic data systems. Three systems were developed to organize and maintain up-to-date program and student information. A Credential Verification database was created to track contacts with international institutions. A Graduate Program Management System (GPMS) was created to display program contact information, graduate faculty listings and program summary reports, and facilitate communications with graduate program personnel. A Degree-Completion database was created to assist with tracking students for graduation purposes, recording of candidacy, and generating comprehensive and final oral examination paperwork. In addition, letters for retroactive registrations, committee dismissals, terminations, etc., can be produced through this electronic data base. The implementation of these systems has helped to expedite many administrative

processes for Graduate Enrollment Services, graduate programs and students. Graduate Enrollment Services will continue to collaborate with the staff of Network Operations to further enhance and customize information for maximum effectiveness.

Graduate Enrollment Services continues to make steady progress at building an in-house graduate degree audit system. One of the primary challenges of this project is building this system with sufficient flexibility to accommodate all the complexities needed to fully audit all students, including those enrolled in complex degree models such as dual-title, concurrent, integrated undergraduate-graduate, law/graduate, medical/graduate, etc. Because of the inherent intricacies of these models and the need for customization of requirements for graduate students, it is not possible to implement an academic degree audit system that will mechanically perform 100% of the advising functions. Nevertheless, our goal is that the degree audit, once completed, will assist the advising community with mapping a significant portion of the more systematic degree requirements and confirming a student's completion of these requirements more efficiently, thus proportionately reducing the advisor's work.

As we work towards a more global University, we need to be mindful of the external changes that influence our environment. The Bologna Agreement in Europe is changing the academic profile of prospective graduate students from participating countries that serve as a source of prospective recruits. To prepare for the implications of the Bologna Agreement, the office of Graduate Enrollment Services had to analyze its admission policies, procedures and methods to ensure sound equivalency and admission decisions for European three-year bachelor's degree recipients. The office of Graduate Enrollment Services continues to learn how the Bologna Declaration is being implemented by European institutions and the changes in their degree structures.

Alumni Relations

Alumni are very important to the development programs of universities. While former graduate students typically remain closely connected to their mentors for many years after graduation, this population does not usually have the same sense of loyalty and connection to the graduate institution, *per se*, as do undergraduate alumni. According to the latest census data, there are 80,088 graduate alumni of Penn State, and of this number 60,170 did not earn their undergraduate degrees at the University. Of the total number of graduate alumni, 20,747 or 26%, are members of the Penn State Alumni Association. In an effort to create more of a sense of connection for Penn State Graduate School alumni, the Graduate School Alumni Society (GSAS) was established in 1997. Significant progress has been made towards building partnerships with Penn State's graduate alumni. Members of GSAS have become involved in delivery of a variety of programs of enrichment for current graduate students. By way of example, the Graduate School exhibition weekend is a platform that the GSAS uses to promote the Graduate School. In 2007, 60 alumni and friends participated as judges in the Exhibition, in contrast to seven alumni in 2003. Donor gifts have contributed to defraying significant costs related to the Exhibition in recent years.

Goals for Further Enhancing Graduate School Services:

- 1. Implementation of a new electronic application with enhanced features for creating a digital record of all application materials, including student documents (résumé, personal statement, writing sample), letters of recommendation, and program-specific questions.**

2. **Enhance our ability to track the success of recruiting underrepresented students through participation in SROP and McNair by adding features to the online application for these scholars to self-identify during the application process, and to capture these responses in an electronic database.**
3. **Provide capability for graduate program faculty to view the complete student application record as a shared file for admissions decisions through GRADS interface.**
4. **Create online workflow systems for high volume processes and forms, such as Resume Study.**
5. **Establish a Knowledge Base for graduate education linked through the Graduate School Web pages.**
6. **Survey graduate degree programs and alumni to determine ways to boost membership of graduate alumni in the Penn State Alumni Association.**
7. **Stimulate greater participation from our graduate alumni constituency through existing and new volunteer opportunities and programs.**
8. **Reach out to and engage international graduate alumni in recruiting international graduate students and helping mentor current international graduate students.**
9. **Create online systems for and transition reporting by colleges related to Graduate School funding programs (e.g., Fund for Excellence in Graduate Recruitment), with the capability for summary data of expenditures by graduate program to be derived from central databases.**

Cover Photos

Top left: Rebecca Golonbeck, graduate student in chemistry at Penn State, demonstrates how to make ice cream with liquid nitrogen at the Clean Energy Expo. Photo by Greg Grieco.

Top right: A participant in the Summer Research Opportunities Program (SROP) prepares for graduate study through this intensive eight-week research program at Penn State. Photo by the Penn State Graduate School.

Middle left: School-age children take an educational 3-D video tour of the surface on Mars during the 2007 Graduate Exhibitions Outreach for Kids program. Photo by Kendra Yoder.

Middle right: Viktoria Driagina, graduate student in linguistics and applied language studies at Penn State, poses in front of her poster entry in the 2005 Graduate Exhibition. Photo by Kendra Yoder.

Bottom left: Hyun Joo Park, graduate student in music, placed second in the Performance category of the 2008 Graduate Exhibition with a piano solo of Rachmaninoff Sonata No.2 Op.36 b-flat minor 1st. Movement." Photo by Kendra Yoder.

Bottom right: Chemical engineering students and mechanical engineering students at the Shell Exploration and Production's Petroleum Engineering Camp in Robert, Louisiana. Photo by the Penn State Department of Public Information.

This publication is available in alternative media on request.

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**APPENDIX A. REPORT OF THE TASK FORCE ON
INTERDISCIPLINARY GRADUATE EDUCATION
March 21, 2008**

Executive Summary

The Task Force was charged with assessing interdisciplinary graduate education, and in particular contrasting intercollege versus department-based programs; identifying institutional encumbrances and possible solutions; and providing recommendations to further promote interdisciplinary graduate training.

Conclusions of the Task Force:

1. *Collaborative, interdisciplinary graduate education must be an institutional priority in order to meet societal needs, prospective student interests and demand, and to ensure that Penn State remains competitive in securing extramural research funding into the future.*
2. *A sample of intercollege programs evaluated at a single snapshot in time, versus department-based programs, tended to have more students supported on external fellowships and traineeships, a characteristic of program quality according to the National Research Council assessment of research doctorate programs.*
3. *A variety of mechanisms to offer interdisciplinary training to graduate students already exists at Penn State. In benchmarking with other institutions, in general, there were no unique models for which Penn State did not already have a direct analogy or more desirable approach, the most desirable being the dual-title model.*
4. *IGERT-launched training programs brought in significant resources to support students and related research activities, fostered cross-disciplinary training through coursework and research, and promoted faculty collaboration. Although these led to some institutionalization by means of a minor and a dual title program, a limitation identified was the lack of institutional resources to perpetuate the full range and capabilities of the funded programs.*
5. *Desirable characteristics of interdisciplinary programs include:*
 - *Addresses complex and novel/important problem*
 - *Creates faculty/department/college synergy and collaboration*
 - *Builds on institutional strengths*
 - *Attracts high quality students*
 - *Provides credit to faculty (including a formal mechanism for evaluative feedback during the P&T process)*
 - *Engages in continuous self-study of sustainability and viability*
 - *Provides students with an avenue to satisfy diversity of professional career interests*
 - *Provides value-added scholarship for the student*
 - *Allows for flexibility in terms of multiple sources of student entry and exit/placement*
6. *Existing institutional structure of resource allocation through colleges/departments is limiting to the proliferation, scope and impact of intercollege programs; a mandate to colleges to support and invest in such programs, as well as central resources for incentives are needed.*

Institutional encumbrances to intercollege, interdisciplinary graduate education identified:

- 1. Stand-alone intercollege programs are often viewed as competing with departmental programs for resources, students and recognition/credit.*
- 2. Institutional support (e.g., assistantships, fellowships) for students (especially first-year) in intercollege programs is very limited and constraining.*
- 3. Although student rotations within intercollege programs provide educational value, they require the student to locate a research home and advisor after admission. This approach reduces the risk for faculty, but raises it for students.*
- 4. As intercollege programs do not receive instructional budgets, the primary mechanism for institutional support of graduate students (i.e., TAs) is dissociated from these programs.*
- 5. Resources are needed for intercollege, interdisciplinary course development and instructional support across units.*
- 6. Administrative responsibility, costs and space for collaborative, intercollege programs are not easy “fits” within the existing college/department structure of the institution.*

Recommendations to address institutional encumbrances and promote collaborative, interdisciplinary graduate training:

- 1. Collaborative, interdisciplinary graduate education should be a priority reflected in strategic planning at the highest level. As such, Colleges should be given a mandate to more formally promote and support participation and leadership by their academic units and individual faculty in intercollege graduate programs, and to remove disincentives to such participation, and these should be reflected in College strategic plans.*
- 2. Where a proposed new programmatic area in graduate education is interdisciplinary and has potential for integration with existing fields of study at Penn State, the dual-title should be employed as the preferred graduate degree model.*
- 3. In areas where the rotation model is common, intercollege programs should not require rotations, but ascertain that a member of the program faculty is willing to serve as an advisor and provide financial support to each prospective student who meets admissions requirements, prior to extending an offer of admission. Otherwise, programs should reserve sufficient resources to subsidize students who do not find an advisor after their first year, with the consequence of admitting fewer new students.*
- 4. The hierarchy of existing approaches/models to support interdisciplinary training of graduate students available at Penn State needs to be better delineated as a special web page.*
- 5. An intercollege, interdisciplinary graduate center should be created within the Graduate School to oversee allocation of resources and functions related to the following:*
 - a. Incentives for academic units to develop and offer interdisciplinary graduate courses*
 - b. Incentives for academic units to host intercollege, interdisciplinary graduate programs*
- 6. Focus on a "Student-Centered Interdisciplinary Graduate Education Initiative" that would prioritize fellowships for intercollege, interdisciplinary graduate students as a*

Graduate School development effort. Penn State's research mission and standing are best served by heavy investment in endowed fellowships. An endowed graduate college, similar to the Rackham Graduate School at the University of Michigan, should be pursued as a valuable major investment for the University.

- 7. The research institutes should be encouraged to more deliberately promote and support interdisciplinary graduate training (e.g., sponsor seminars and workshops for graduate students; support graduate student travel related to interdisciplinary research and training; sponsor value-added skills training for graduate students; etc.).*

The Graduate School should provide opportunities for enabling models to be shared with graduate programs.

**APPENDIX B. STRATEGIC REPORT FOR PROFESSIONAL
MASTER'S DEGREES AT PENN STATE
April, 2008**

EXECUTIVE SUMMARY

As globalization marches forward, more employers and governments around the world will be seeking highly skilled professional employees. For the foreseeable future, high-skilled professional jobs will require post-baccalaureate professional education in the form of certificates and master's degrees. As the global demand for high-skilled professional employees heightens, the lack of capacity to meet that demand in certain parts of the world, including China, India, and Latin America, point to a ripe opportunity for the Pennsylvania State University. The University, therefore, should expand the number of professional master's degree programs it offers, especially at Penn State Great Valley and Penn State Harrisburg. A prime consideration when remodeling existing master's programs, or creating new professional master's programs, should be establishing sustainable regional and international partnerships with other educational institutions as well as organizations in the public and private sectors.

The following constitute the committee's recommendations for advancing an agenda to enlarge the University's portfolio of professional master's degree programs.

The Graduate School should take an active role in promoting new professional master's degree programs.

The University should adopt a resident tuition revenue sharing arrangement to incentivize programs and faculty to develop new professional master's degree programs.

Given Penn State Great Valley's prime location, specialized campus mission, and the anticipated national growth in demand for graduates with professional master's degrees, the campus should be encouraged to expand its program offerings in innovative and blended ways.

The University should evaluate the potential value of adding more Professional Science Masters (PSM) programs before such programs are adopted.

Delivery modes of new programs should be flexible, with the need for blended, online, or face-to-face delivery to be determined by the program.

Programs should develop IUG-type opportunities for their own undergraduate students, as well as for undergraduates from other Penn State campuses and regional institutions.

The University should encourage programs to establish collaborative professional master's programs with foreign institutions.

**APPENDIX C. TASK FORCE ON GLOBALIZATION OF RESEARCH
AND GRADUATE EDUCATION
March 20, 2008**

EXCERPTS FROM THE EXECUTIVE SUMMARY

The Task Force on Globalization of Research and Graduate Education was charged by the Senior Vice President for Research and the Dean of the Graduate School and the Vice Provost for International Programs to assess several aspects of Penn State's engagement with the global community through its research and graduate education programs. The Task Force was composed of faculty and staff representatives of a number of colleges and units, each of whom had significant engagement with international activities and therefore was knowledgeable about the issues involved. The Task Force gathered information about Penn State's current global engagement through a survey of all graduate faculty at most of the campuses in the Penn State system at which graduate education occurs. Colleges were also surveyed as to existing agreements with international entities, and internationally active faculty were interviewed in small groups both about Penn State's current efforts and about possible opportunities.

The Task Force was able to reach several conclusions about the state of global engagement in research and graduate education:

1. International engagement has several goals, including enhancing research at Penn State through interacting with colleagues abroad, attracting excellent students to our graduate programs, providing expanded educational opportunities to our graduate students in an increasingly connected world, gaining access to unique scholarly opportunities which exist only in other parts of the world, gaining resources through international funding opportunities, and providing service in other nations which may benefit from our capabilities. These multiple goals necessitate a many-faceted approach which must reflect the differing needs of various units within Penn State and even the differing needs of various faculty within a given unit.
2. Penn State already has vast international engagement in research and graduate education, although there is no broad picture of the engagement available. Current efforts are focused in those areas of the world where research has historically been strongest. The region with which Penn State interacts most is Western Europe, followed by East Asia and Canada. The most common interactions are student exchanges and individual faculty collaborations in various forms.
3. There is little coordination of existing international efforts in research and graduate education at Penn State. For example, there is no central listing of existing agreements with international institutions and no guidelines for the establishment of such agreements.

The Task Force developed several specific recommendations for advancing global engagement in graduate education and research:

1. Penn State should adopt a global vision statement to guide its efforts.
2. Penn State should create a standing Advisory Council for Globalization to advise the Vice Provost and assist with implementation of strategic initiatives.

3. Penn State should establish clear universal administrative guidelines for procedures involved with global engagement. Primary among these issues are the establishment of international agreements such as Memoranda of Understanding, which should be recorded in a central database to allow for strategic planning.
4. Penn State should establish facilities and processes for the short term housing needs of international visitors.
5. The Task Force could not recommend focusing Penn State's efforts on any particular area of the globe, since the opportunities vary widely for different units. The Task Force also does not make a recommendation for establishing a campus abroad. Instead a number of educational mechanisms are suggested, including concurrent degrees and certificates as well as on-line courses. Service-oriented graduate education experiences appear to be an especially valuable model. Joint laboratories or adjunct positions could also enhance Penn State's global presence.
6. Penn State should establish a centralized web portal which would prominently display the vast global engagement across the university and contain links to all of the different internationally relevant programs. Such portals at other universities are seen as especially effective tools for marketing international efforts.

In addition to the above recommendations for action at the University level, the task force has a number of other recommendations which may be appropriate for specific units.

In summary, the Task Force sees great purpose and potential for Penn State in global engagement of its graduate education and research efforts. The complexities of the goals and the differences between Penn State units and differences between parts of the globe all combine to preclude the recommendation of a simple generic policy with which to move forward. On the other hand, there are multiple individual steps which could greatly enhance our global presence, and have substantial impact on Penn State as well as allow Penn State to have a greater impact on the global community, and key to these are greater and more effective centralized support.