Task Force on the Organization of Graduate Education at the Penn State College of Medicine

FINAL REPORT; May 26, 2009

Conclusion of the Task Force on the Organization of Graduate Education: The Task Force concludes that an *integrated* Graduate Degree Program in Biomedical Sciences with various Options will improve student recruitment, increase program efficiency, provide increased flexibility and choices to students, and promote competitiveness for training grant applications. These enhancements will better position both our students and our graduate program for success in the future.

Process: The Task Force has met regularly since August 21, 2008. Briefly, this process involved

- 1) analyzing strengths and weaknesses of the various graduate programs at Penn State Hershey;
- 2) surveying currently enrolled graduate students regarding their perception of the organization of the current graduate programs and alterations to this structure that would make our program(s) more attractive to applicants;
- 3) eliciting input from member schools of the Group on Graduate Research, Education, and Training (GREAT Group) about their experiences with integrated graduate programs;
- 4) concluding from the inputs obtained from the above activities that integration of a number of the current graduate programs at Penn State Hershey will enhance the number and quality of graduate applicants as well as increase the quality of graduate education;
- 5) constructing a detailed framework and budget for the organization and function of an integrated graduate program that would offer a graduate degree in Biomedical Sciences with a choice of several areas of specialization ('Options'); and
- 6) soliciting input for modifications as well as support of this integrated program from faculty of the current graduate programs, Chairs of the Basic Science Departments, Dr. Harold Paz (Dean of the Penn State College of Medicine), and Wayne Zolko (Associate Vice President for Finance and Business and Controller).

The outcomes of this process are the attached Business (pp. 4-7) and Organizational (pp. 8-16) Plans. As indicated in the Business Plan, funds to cover the administrative costs and to support the first year and a half (*i.e.*, Fall, Spring, and Summer semesters of the first year as well as the Fall semester of the second year of graduate study) stipend and tuition of incoming graduate students would come from the funds that currently support the graduate students in Biochemistry and Molecular Biology, Cellular and Molecular Biology, Cellular and Molecular Physiology, Genetics, Microbiology and Immunology, and Pharmacology. At this time it does not seem that other graduate programs will readily incorporate into this integrated program but that should not preclude possible inclusion of these programs at some future time.

This plan has been very favorably received and reviewed by the Chairs of the Basic Science Departments, the Academic Team, Dr. Paz, and Wayne Zolko. Members of the Task Force have communicated this plan to faculty in their programs as well and report that faculty members are generally quite supportive.

Summary of the Business and Organizational Plans

Abstract: The Task Force has produced highly developed frameworks for both the Organizational and Business Plans for a new interdisciplinary PhD degree program to be implemented at Penn State Hershey. The recommended structure is an integrated degree in Biomedical Sciences with Options. The recommended plan is a paradigm shift at Penn State Hershey that seeks to gain the advantages of an integrated program without compromising the features and practices that have contributed to the excellence of the existing graduate programs. The following report describes details of the envisioned structure, operation, administration, and funding for such a program.

Rationale: To increase our competitiveness for quality students, use resources wisely, and successfully compete for graduate training grants the Task Force has developed a plan for the establishment of a Biomedical Sciences (BMS) Graduate Program with Options. The integrated Program enables first-year students to choose any Graduate Faculty Member as a mentor. This flexibility is highly valued by many students and thus would increase the Program's ability to attract and matriculate top-quality applicants. The combined Program would enjoy efficiencies of scale in recruiting, teaching, and administration. The larger pool of applicants and students would also provide an advantage when competing for training grants. In the plan that follows, specific recommendations are made regarding administration, governance, and function of the Program and Options. The Program will be headed by a BMS Graduate Program Director and governed by a BMS Graduate Program Advisory Group. The Program will combine recruitment and admissions functions, with formation of a Graduate Recruitment Committee and hiring of a Recruitment Specialist who will also serve as a Database Coordinator. The recommended recruitment plan seeks to gain greater efficiency while allowing individual Options the ability to individually interview and recruit interested students. The plan includes recommendations for development of Options including requirements for curriculum, rotations, candidacy exams, mentors, thesis committees, and comprehensive examinations. The plan seeks to provide Options the flexibility and control necessary to build a strong specialized program while still enjoying the advantages of an integrated graduate program. Finally, the plan includes a paradigm for institutional funding of the Integrated Program, including: effort for the Director, salary for a Recruitment Specialist/Database Coordinator, salary for administrative support persons, effort for Option Directors, recruitment costs, and student stipend and tuition support for the first year and a half.

RECOMMENDATIONS FOR IMPLEMENTATION OF THESE PLANS

While much work has been invested in designing and gaining support for these plans, substantial additional undertakings are necessary for the goal of recruiting the first class of students to enter the integrated BMS Graduate Program for the 2011-2012 academic year. These undertakings involve:

- 1) conducting formal votes as necessary for support by faculty of the existing graduate programs or departments that may want to be incorporated into the integrated Program;
 - 2) appointing an Implementation Group charged with
- a) soliciting and shepherding the formation of specific Options to be offered within the Program. One goal of this process should be to encourage faculty to consider the formation of innovative, interdepartmental, and interdisciplinary Options;
- b) drafting and submitting the documents required for approval of this new integrated graduate program by The Graduate School of The Pennsylvania State University (http://www.gradsch.psu.edu/policies/faculty/progprop.html); and
- c) finalizing details of the attached Budget and Organizational Plans needed for operation of the Program and Options as well as for approval of the Program through The Graduate School. One specific area that must be finalized is the formula for partitioning increased graduate tuition revenues that will be available to increase the number of graduate slots available in the Program.

It is recommended that this Implementation Group originally consist of four members from the current Task Force. Following the identification of Options, one member representing each Option should be added to this group. This representative may be one of the initial members of the Implementation Group.

3) obtaining final approval for the integrated BMS Program from The Graduate Council of The Pennsylvania Sate University.

To permit robust recruitment efforts for the first class to enter in Fall 2011, approval of this program by the Graduate School needs to occur in Fall 2009. Thus, it is critical that the Implementation Group be appointed and begin work as soon as possible.

Business Plan for Integrated Graduate Degree Program in Biomedical Sciences

Budget

INCOME (from current support for graduate students in Biochemistry and Molecular Biology, Cell and Molecular Biology, Cellular and Molecular Physiology, Genetics, Microbiology and Immunology, and Pharmacology)

Total	\$1,290,275
From 1.0 FTE	\$46,600
From current dept/program stipend and tuition money	\$1,243,675

EXPENSES

Recruiter	\$57,900
Program Director (1 hr per week per 10 students)	cost covered in newly approved metrics
Option Director (1 hr per week per 10 students)	cost covered in newly approved metrics
2.5 FTE Administrative Support Coordinators	\$116,500
20 stipends (1.5 years; \$33,390/slot)	\$667,800
20 tuitions (1.5 years; \$18,900/slot)	\$378,000
Recruitment costs (assume 75 @ \$675)	\$50,625
Total	\$1,270,825

(each slot currently costs \$52,290 for the 1.5 years of stipend and tuition)

Maintaining and Growing the Program in the Future

- 1) Funds will be committed for 'slots' rather than as dollars; thus, there will be funds for at least 20 students each year (regardless of increases in tuition and stipend), with the ability to carry-over stipend funds not used in any given year.
- 2) Research grants, training grants, predoctoral fellowships, and Master's students provide tuition revenue: Tuition money stays at Penn State Hershey. The \sim \$1 million paid by external or departmental funds is used to fund graduate education metrics. Mr. Zolko has indicated that a portion of future growth in tuition paid from external and department general funds, and the development of Master's degree programs that attract tuition-paying students, could be used to expand the BMS Graduate Program. Detailed definition of the portion of this increase that would be used to fund this growth <u>must</u> be finalized prior to implementation of this plan.

Historically, tuition has increased and the relative contribution from the College versus external and departmental funds toward tuition has fluctuated from year to year as indicated in the Table below.

FY	Tuition paid from grants or general funds	Tuition paid by College	% increase in PSU tuition	% increase in tuition from grants or general funds	% increase in tuition paid by College
1999	\$346,183	\$274,154			
2000	\$485,426	\$307,269	5.0	40	12
2001	\$619,807	\$223,224	6.5	28	-28
2002	\$587,981	\$228,296	8.0	-5	2
2003	\$695,153	\$375, 085	13.5	18	64
2004	\$902,153	\$445,679	16.8	30	19
2005	\$1,012,920	\$495,628	14.7	12	12
2006	\$1,241,171	\$327,146	11.2	22.5	-34
2007	\$1,220,519	\$319,408	5.6	-2	-3
2008	\$1,278,206	\$382, 530		5	20

[•] Anticipate that tuition from grants/general funds would decrease ~\$140,000/year by covering the tuition for 18 months instead of 12 months.

Entering Graduate Students by Program and Year: the number of students designated to be recruited into this program in its first year is comparable to the number of students recruited for the three years prior to the NIH boom (1999-2001) as well as the last three years (2006-2008).

Program	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Biochem	7	4	3	4	4	4	4	4	3	3
СМВ	3	5	4	4	7	2	4	4	5	5
Physio	3	2	2	5+	4	5	5	3	3	3
				1 MS						
Pharm	3	3	2	4	4	2	4	2	3	3
Micro	5	3	5	3	4	8	3	3	3	3
Genetics	1	2	5	4 +	7 +	6	6	4	2	2
				1(dir)	2(dir)					
Total	22	19	21	25	30	27	26	20	19	19
Anatomy	5 MS	1 MS	1	1		2	2	4	4	6
Neuro	2+1	3+2	2 + 1	2 + 4	2 + 2	3 + 2	3	6	4	2
BioE	4	5 MS	2	4	2	2		1	2	2
Mol Tox	2	2	2		1	1	1		1	
MM	4	3	4	3	5	5	1	1	4	2
Chem Bio		1		1		2	1	1	1	2
I Bio/IID	2	2	2		1	1	1		1	
BIG										
BSE						1				
BTD					1					
Total Huck	8	8	8	4	9	11	4	2	7	4

Summary of Funding Paradigm

- Financial support for the recruitment of graduate students would be entirely supported by the BMS Graduate Program.
- College of Medicine support for students would be budgeted as 'slots' rather than dollars.
- The BMS Graduate Program would provide the first year and a half of student stipend and tuition support prior to this responsibility being transferred to the Research Mentor/Department.
- Administrative Support for the BMS Graduate Program and the Options would be centrally supported.
- Increased tuition income could be used to support expansion of number of students.
- Options would be strongly encouraged to submit training grant applications. Centralized administrative support would facilitate these efforts.
- Research Mentors would be encouraged to work with students to submit external fellowship awards. Incentive programs should be developed to recognize these endeavors.

Organizational Plan for Integrated Graduate Degree Program in Biomedical Sciences

Overview

Integration of graduate degree programs has increased the quality of matriculating students at a wide range of biomedical institutions. Such a program can also be designed to permit students to choose among all potential Options and mentors able to fund them at the end of their first year of graduate study to provide flexibility desired by students. To incorporate these advantages, a new graduate degree program at Penn State Hershey is being considered for submission to the Graduate Council. The degree offered would be a Ph.D. in Biomedical Sciences with an Option in one of several thematic areas. The Options may reflect the curriculum and faculty of existing Graduate Programs or new aggregations of faculty with related research interests. One goal is to reduce redundancy of faculty and administrative effort. Prospective students may rank their interest in specific Options at the time of application and may choose an Option upon matriculation; however, students would be allowed to choose among the full spectrum of Options and research mentors until the end of their first year.

Background findings

Support for this change is found in the following data:

A. Input from more than 25 institutions that belong to the GREAT (Graduate Research, Education, and Training) Group and have various formats of integrated programs report the following benefits:

- increased numbers of applicants. For institutions who provided data, these increases ranged from 60% to 10-fold within a few years following integration;
- increased quality of matriculating students as judged by GRE scores (increases of 50 to 100 points) and GPA (increases of 0.2);
- increased student satisfaction because of ability to choose among more labs; and
- increased faculty support for integration as student quality improved.

B. Almost 90% of our current students responded in a survey that they would have liked to have been able to choose among all labs that were able to take a student, regardless of their graduate program affiliation, when they were making this decision.

Benefits of Integrated Program

- increased regional and national profile of graduate studies at Penn State Hershey related to coordinated efforts by Recruitment Specialist and Director of Graduate Program
- potential to develop novel, interdepartmental Options;
- dynamic nature of Options with regular review of existing Options and potential to propose new Options; and
- potential to develop a Master's in Biomedical Sciences Option

Stakeholders

The stakeholders in this process are: 1) the students, 2) the faculty, 3) the Options, 4) the Department Chairs, 5) the College, and 6) the University.

Biomedical Sciences (BMS) Graduate Program Director

The BMS Graduate Program Director (effort calculated based on 1 hr per week per 10 students), who reports to the Associate Dean for Graduate Studies (see description of the Associate Dean's responsibility in Appendix), will chair both the BMS Graduate Program Advisory Group and the Recruitment Committee and will provide oversight for the Recruitment Specialist/Database Coordinator (see below) and the Administrative Support Coordinators (see below). The BMS Graduate Program Director will directly interact with first-year students to provide direction, to ensure that all requirements are being fulfilled, and to monitor the progress of the students until they select an Option. In addition, the BMS Graduate Program Director will assist students as they consider potential research mentors. However, each student is ultimately responsible for identifying a laboratory in which they can successfully complete their thesis research. The BMS Graduate Program Director will also make students aware of appropriate fellowship opportunities. Once a student selects an Option, including students who do so upon matriculation, the Option Director will take the responsibility of monitoring the student's progress through the Graduate Program. The BMS Graduate Program Director can be involved to address issues that are not resolved within the Option.

The BMS Graduate Program Director will be appointed by the Vice Dean for Research and Graduate Studies in consultation with the Associate Dean for Graduate Studies and the Option Directors. Continuation in this position is dependent upon satisfactory job performance review every other year.

Graduate Program Committee and BMS Graduate Program Advisory Group

The Graduate Program Committee will be chaired by the Associate Dean for Graduate Studies and will be composed of the BMS Graduate Program Director, Option Directors, and Directors of other graduate programs (*e.g.*, Anatomy, Health Evaluation Sciences, Bioengineering) as voting members. The Recruitment Specialist/Database Coordinator will attend as a non-voting member. The Graduate Program Committee will consider matters that pertain across all graduate programs.

The BMS Graduate Program Advisory Group is a permanent sub-group of the Graduate Program Committee. In addition to the BMS Graduate Program Director who chairs this group, it is composed of the Option Directors as voting members. The Recruitment Specialist/Database Coordinator will attend as a non-voting member. This group will meet as required to consider issues related to multiple Options within the BMS Graduate Program such as curricular matters for first-year students, rules governing first-year students, rules governing faculty membership in Options, and formation, review, or continuation of existing Options.

Graduate Recruitment Committee

Recruitment is the responsibility of the Graduate Recruitment Committee and the Recruitment Specialist/Database Coordinator. The Recruitment Committee will consist of one faculty member from each Option, as well as one member from each additional graduate program. This committee will be chaired by the Director of the BMS Graduate Program. The Recruitment

Specialist/Database Coordinator will also participate on the Recruitment Committee as a non-voting member.

Members of the Recruitment Committee are responsible for the identification and recruitment of qualified students. As such, the members will review applications, participate in student interviews and make a final decision regarding offers of admission into the Graduate Program. In addition each Committee member will:

- serve as a liaison between interested students and the faculty in their Option;
- recruit faculty to participate in interview days and/or recruitment;
- be present and actively involved in recruitment days (expect 3-5 recruitment days/year);
- review applications either individually or as teams, and prioritize interviewees; and
- cultivate contacts with faculty in appropriate undergraduate institutions (both regionally and nationally).

Review of Applications

Each application will be reviewed by at least three members on the Recruitment Committee including one member who is not associated with the applicant-ranked Option(s). However, individuals on the Recruitment Committee may view every application, may view only the applicants that have indicated an interest in the Option(s) they represent, or may have the recruitment specialist screen applicants interested in the Option(s) they represent for any desired criteria. Prior to the first meeting of the Recruitment Committee, each Graduate Faculty member will complete a form indicating how many students they could support *immediately* and the Options with which they are associated. This form will be given to their Department Chair, who will verify or adjust the number of students each faculty can take at the current time, and sign off on the final number. The forms will be submitted to the Recruitment Specialist and will be used to set the target number of students to be recruited. While the specific faculty who can take students may change between initiation of recruitment and when the students would need to be financially supported by the thesis adviser (approximately 2 years), it is expected that the change in the aggregate number for all Options will be minimal.

The Recruitment Committee will convene at least every two weeks beginning in December. Prior to each meeting the Option representatives should submit a list of applicants they would like to interview and copies of these applications will be made available to the entire Committee. Factors affecting this decision-making process include: 1) the quality of the applicant, 2) the Option(s) the applicant is interested in, and 3) the number of interviews, offers and acceptances made to date. At each meeting the prioritization of applicants for interview will be reviewed and adjusted.

Recruitment Days

Recruitment will be determined by a consensus of best practices, and may include Option-specific details and events. For example, some Options may prefer to meet candidates at the airport, and/or may prefer to have a mixing event at a faculty home rather than dinner at a local restaurant. Variables could include: length of each interview, number of interviews, nature of meetings with other applicants, size of meal groups, local activities, *etc*. One model would be to have applicants arrive on Thursday afternoon/evening, with Friday morning consisting of breakfast, a welcoming presentation and 2-3 faculty interviews, followed by lunch with current students from an individual Option or group of Options. Friday afternoon would

include a tour of facilities and another 4-5 faculty interviews. Friday evening would include dinner with faculty from an individual Option or group of Options. Most faculty interviews would take place on Friday. However, Saturday morning could include another 2-3 interviews, especially for those students with interest in more than two Options. Saturday from 11 am - 3 pm may involve common local activities with current graduate students. Applicants will rank Options according to their level of interest and this ranking will be used to determine which Options they are affiliated with for the Option-specific activities.

We expect a need to interview 3-4 students for each acceptance. Thus, we would need to interview 60 to 80 applicants to fill a class of about 20 students. The ideal group size for recruitment will dictate the number of recruiting days. A group size of ~20 would mean 3-4 recruiting days. While 20 students per interview day may appear large, activities can be choreographed such that the maximum group size for any event is 4. This group size would be achieved by Option-specific activities. The cost of all travel, lodging, meals, and Option-specific events would be supported by a centralized budget. While there will be significant latitude for Options to define the nature of the Option-specific events, the expectation is that all costs will be justified in terms of the best experience for the interviewing students. Phone and Skype interviews would also be covered by the centralized budget.

Admissions Decision

Admissions decisions will be made by the Graduate Recruitment Committee, and will reflect: 1) the opinion of the relevant Option(s), 2) written and verbal feedback from the faculty and students who interacted with the applicant, and 3) the apparent breadth of interest of the student either within an Option or across Options.

Recruitment Specialist/Database Coordinator

- 1.0 FTE: approximately 50% of the time of the person would be spent on recruitment while the other 50% of the time would be spent developing a database that includes information relevant to applicants, matriculated students and graduates
- Create both Option-specific and Institution-specific recruitment materials
- Attend graduate school recruitment fairs
- Provide follow-up contact with student attendees and potential students from mentored programs (like McNair Scholars Program)
- Visit highly regarded undergraduate institutions and attend national meetings to meet students personally and refer interested students to appropriate faculty
- Visit with local and regional undergraduate institutions to meet with students and faculty and let them know about our Graduate Programs
- Serve as a liaison between interested students and schedule visits with faculty in those areas of expertise
- Serve as a liaison between other institutions that may be interested in scheduling our faculty for seminars or other opportunities to meet with interested students
- Help plan as well as participate in recruitment days
- Provide specialized services in recruitment that would be tailored to Options or Programs that request the assistance
- Develop and maintain a centralized knowledge base for recruitment
- Clearly understand different Option and programmatic goals

- Preferably have a graduate degree in the biological sciences
- Have a working knowledge of faculty expertise and develop a personal network that rapidly connects interested students to faculty in their area of interest; that is, emphasize personalized communication over blast e-mail approaches
- Have a thorough understanding of The Pennsylvania State University, the Graduate School, and, in particular, College of Medicine policies and procedures regarding the guidelines for obtaining a teaching or research assistantship, stipends and other benefits that students receive
- Be responsible for maintaining all data necessary for implementation of the Program and tracking of students through the Options and beyond graduation. This data will include applicant pool data, matriculation data, as well as grade and exam performance data, awards and fellowship data, data relevant for training grant applications, as well as training data for Departments and Faculty
- Oversee and direct the Administrative Support Coordinators as instructed by the BMS Graduate Program Director

Other activities of the Recruitment Specialist will include, but are not limited to: 1) providing key information and recruitment materials regarding campus-wide programs at Penn State; 2) providing recruitment materials about the region (*e.g.*, materials that provide cultural and regional attractions that make Hershey and our proximity to major urban centers such a great place to live); and 3) developing a group of current students to serve as an additional recruiting resource

Option Criteria and Oversight

Each Option needs to provide a unique focus. Consistent with Penn State Program Proposal Procedures (http://www.gradsch.psu.edu/policies/faculty/progprop.html), achieving this focus would be accomplished by offering at least 9 credits of unique curriculum of which no more than 4 credits would be accrued from literature-based courses/colloquium/journal clubs. (For additional information on course work requirements see 'Curriculum' below.) A critical mass of dedicated faculty ($n \ge 12$), of which at least half must have ongoing funding, is also required. Each Option will be expected to accept an average of at least 2 students per year and to maintain a steady state of a minimum of 12 students.

Proposals for the Initial Options will be reviewed and approved/declined by an Implementation Group appointed by the BMS Graduate Program Director. Ongoing Option review will be by the BMS Graduate Program Advisory Group. Standing Options will be reviewed at least every five years by the BMS Graduate Program Advisory Group with a three-quarters favorable vote required for continuation. If the vote is not favorable, the Option will be continued on a 'provisional' basis for two years during which the Option will work to address the deficiencies cited by the Advisory Group. The Option will be reviewed again after this two year provisional status. If the vote is again unfavorable, the Option will be terminated. Already enrolled students will be permitted to graduate from this Option or transfer to another Option. No future incoming students will be permitted to enroll in the terminated Option.

Each Option will have a Director (effort calculated based on 1 hr per week per 10 students) who will lead the Option Faculty Committee and will be the first line of contact for the students in

that Option. The Option Director will serve on the BMS Graduate Program Advisory Group, as well as the Graduate Program Committee. Each Option can designate additional responsibilities that are necessary to implement the Option. These responsibilities may include: membership on the recruitment committee, curriculum development and oversight, training grant applications and implementation, student seminar series, and other intellectual activities of the Option. Administrative support for all Options will be provided by the Office of the BMS Graduate Program Director.

Administrative Support Coordinators: 2.5 FTEs

(Note that 1.0 FTE is currently supported by the College. Thus, this is the addition of 1.5 FTE.)

Administrative Support Coordinators report to the BMS Program Director, but also facilitate the responsibilities of the Option Directors and the Recruitment Specialist/Database Coordinator. The current steady state combined size of the independent programs whose budgets will be shifted to the new Integrated Graduate Degree Program in Biomedical Sciences is ~130 students. The anticipated steady state size of the new program is 120-140 students depending on time to Ph.D. completion. Currently the independent programs are supported by a combination of an estimated 10-50% effort/Program of Departmental administrative assistants and administrative assistants from the Office of Graduate Studies, or approximately 0.3 FTE/20 students. The proposed budget describes 2.5 FTE for Administrative Support coordinators to accommodate the anticipated steady state student population as well as provide needed support for the Recruitment Specialist/Database Coordinator and the Administrative Assistant for Graduate Education.

Administrative Support Coordinators include:

- Provide administrative support to the Program Director, Option Directors, and Recruitment Specialist/Database Coordinator.
- Maintain and monitor operating budgets and assist with fiscal year budget proposals.
 Provide monthly financial reports to the Program Director tracking expenses and funds available. Conduct purchasing activities.
- Complete, coordinate, and approve the processing of graduate student forms via the University's student system ISIS and GRADS. Process reappointment (University support via assistantships) paperwork in IBIS as well as other IBIS reimbursements.
- Serve as a liaison with various College of Medicine departments hosting graduate students as well as with Graduate Enrollment Services at University Park.
- Coordinate and assist with matriculated student projects, meetings, and special events associated with the Options. Duties include but are not limited to student seminar series, adherence to University requirements and policies working intimately with Graduate Enrollment Services.
- Responsible for typing and composing correspondence, processing mail, and operating various office equipment. Also performs all necessary data entry. Maintain confidentiality of student files.
- Schedule and maintain calendar and coordinate courses for the Options, including teleconferenced courses between HY and UP.
- Provide support to faculty, staff and students. Answer questions, counsel and advise on

- various policies and procedures. Provide information on University policies and procedures.
- Continually compile graduate student statistics and grade tracking reports for Option directors, Program Director and Associate Dean for Graduate Studies.

Faculty Membership in an Option

Each Option will develop a matrix that measures and documents participation of faculty in that Option. In addition, each Option will determine the level of participation that is required to remain as a member of the Option. Any specific effort by an Option member can only be included in the effort related to one Option. For example, teaching in a core BMS course can only be counted toward the efforts of a single Option. Examples of efforts that may count toward membership in an Option include teaching courses, mentoring students, interviewing applicants, participating in recruitment activities, participating in the design and/or administration of candidacy examinations, and serving as a member of thesis committees, committees required for the function of the Option, and/or the Graduate Recruitment Committee.

Curriculum

A degree in the BMS Graduate Program will require a minimum of 27 credit hours of course work, and a minimum of 9 Option-specific credits. These credit hours will be divided among the Core Curriculum required by every student in the Program and requirements and/or electives specified by the student's Option. All students will take the Core Curriculum courses BMS 501, 502, and 503 (each course is 3 credits; total 9 credits). These BMS core courses will normally be completed during the Fall of the first year. In addition, all students are required to take Ethics in Life Sciences (IBIOS 591; 1 credit), Colloquium (IBIOS 590 or a BMS590 equivalent, 2 credits for each of 2 semesters, 4 credits total) and an appropriate statistics course (3 credits). Together, this totals 17 credits required for all BMS students. In addition each student will earn at least 10 other required or elective credits for their Option. These credits must include a total of at least 4 semesters of journal club/literature-based course (1 credit per semester, 4 credits). If the student chooses an Option affiliation upon matriculation, they may begin taking Option-specific courses during their first year. However, students who have not determined an Option affiliation may complete course work from two or more Options.

The second-year curriculum will be determined in consultation with the Research Mentor and the Option Director. Each Option may have additional requirements beyond these minimal requirements for graduation.

To remain in the BMS Graduate Program, students (1) must receive no more than one grade lower than a B minus (B-) in BMS 501, 502 and 503 of the Core Curriculum, (2) must have \geq 3.0 GPA at the end of the first year, and (3) must satisfactorily complete the Candidacy Exam prior to the beginning of their second year. Grades in journal club and research (600 or 601) courses do not count toward the GPA. Research credits will be graded as R or F. No more than two attempts will be allowed for the Candidacy Exam.

English Requirement: Students will demonstrate proficiency in oral and written English communication. This proficiency will be assessed by a written 2-3 page description of three

rotation projects. In addition, the candidacy exam committee will grade the student for written and/or oral English proficiency as pass or fail.

Laboratory Rotations

Four laboratory rotations will be synchronized in 6-week slots: October through mid-November, mid-January through February, March through mid-April, mid-April through May. Early starts or extensions for the first two rotations can be arranged at the convenience of the Research Mentor and student. It is expected that students will choose a laboratory by the end of June. Students may rotate with any Graduate Faculty member, but should be cognizant of the need to identify a Research Mentor/Department that can provide future financial support beginning in January of the second year of graduate study. It is anticipated that most rotations would be with Graduate Faculty members who are associated with the intended Option, although this is not required.

Candidacy Exam

Prior to the Candidacy Exam students will choose an Option. The Candidacy Exam will have a component that is common to all students and a component that is Option-specific. The common component would be given by mid-June of the first year and will consist of questions submitted by faculty from each track of the Fall Core Curriculum (BMS501, 502, and 503). Thus, students would be responsible for answering two of three questions submitted by each course they completed. Exams will be 1-2 days and would consist of written responses. An exam coordinator would obtain the completed exams and return them to the appropriate faculty for grading. If the student passes this written portion of the candidacy, the student would then take any additional Option-specific requirements for candidacy. For example, an Option may ask the student to take an oral and/or written exam that: (1) is based on questions derived from the common component, (2) requires more detailed answers to the written exam questions, (3) requires responses to additional new questions, (4) requires presentation of a manuscript, or (5) requires nothing additional. Option-specific components must be completed by the end of June. Fifty percent of Faculty participating in Candidacy Examination should be rotated every 2 years, with no individual faculty member participating for more than 4 years in either the common or Option-specific components.

Choice of Research Mentor

The choice of research mentor will be based on five components: 1) interest of the student, 2) interest of the research mentor, 3) satisfactory completion of the candidacy exam (common and Option-specific components), 4) acceptance of the Department Chair for future responsibilities for the financial support of the student, and 5) a project appropriate per the Option Director/Committee. It is anticipated that most students will choose a Graduate Faculty member who is associated with the chosen Option, although this is not required.

Thesis Committee

Thesis Committees will be approved by the Option Director and will include at least three Option Faculty and at least one additional Graduate Faculty member. One of these four members can serve as the Outside member in the absence of any financial connections to the Research Mentor/Committee Chair (*e.g.*, common Departmental Unit, collaborative research). Spouses and research faculty in the research program of the Mentor/Committee Chair may be

included only as Special members on the Thesis committee.

Comprehensive Exam

The details of the Comprehensive Exam are the purview of the Option, but must involve a written proposal and oral defense.

Ongoing Questions

- Will faculty continue to expend effort on intercollege programs and to what degree?
- Will Department Chairs continue to sign off in support of students from intercollege programs and to what degree?

Significance of an Integrated Graduate Degree Program

The Graduate Program Organization Task Force recognizes the importance of a multi-faceted approach to the recruitment and retention of the best and brightest students for our graduate programs. This approach requires a cooperative and synergistic effort on the part of faculty, staff, and current students. The goal of this integrated program is to balance efficiency and control, while providing for the development of individual relationships and applicant options. The proposed separation of the responsibility of the educational aspects of graduate training (Options), from the research training (Mentor/Department), is intended to promote the highest quality experiences in both components. The ability of the Research Mentor to provide experimental training that is independent of and complementary to the academic training promotes the type of interdisciplinary research that will carry Penn State Hershey forward and increase our future competitiveness in biomedical sciences.

Task Force Membership

Anatomy

Biochemistry and Molecular Biology.

Bioengineering

Cell and Molecular Biology

Genetics

Immunology and Infectious Diseases

Integrative Biosciences – BIG
Integrative Biosciences - CB

Microbiology & Immunology

Molecular Medicine Molecular Toxicology

Neuroscience Pharmacology

Physiology

Public Health Sciences

Chair

Patricia McLaughlin, Professor Ira Ropson, Associate Professor

William Weiss, Professor

David Antonetti, Associate Professor Sarah Bronson, Associate Professor

Neil Christensen, Professor Keith Cheng, Professor

Thomas Spratt, Associate Professor

Robert Bonneau, Professor Craig Meyers, Professor

Jong Yun, Associate Professor (replaced Tao Lowe the initial member from this program)

Ian Simpson, Professor

Jong Yun, Associate Professor

Steven Abcouwer, Associate Professor Robin Taylor Wilson, Assistant Professor

Ralph L. Keil, Associate Professor

APPENDIX

Responsibilities of the Associate Dean for Graduate Studies Penn State College of Medicine

The Associate Dean for Graduate Studies is responsible for general oversight of all graduate education offered at the College of Medicine. This includes implementation of academic policies and procedures as specified by the College of Medicine Faculty Organization, The Graduate Council and The University Faculty Senate, as well as administrative policies and procedures specified by the Dean of the College of Medicine, the Dean of the Graduate School, and the President of the University. The Associate Dean at the College of Medicine currently provides overall direction for:

- 13 PhD graduate programs
 - o 3 departmental programs
 - o 2 interdepartmental programs
 - o 8 IGDPs
- 3 Masters degree programs
 - o 2 in residence
 - o 1 online
- ~ 250 students in residence. ~ 100 students online
- ~ 200 Graduate Faculty

Specific University-level responsibilities include:

- Annual college reporting, including
 - o Annual evaluative reviews between students and advisors
 - o RCR required training
- College-level oversight of data collection for any external reviews/reports (*e.g.*, NSF, NCR, CoGS)
- College-level oversight of data collection for any University/Graduate School reviews
 - o College-level assessment of the programs
 - o review and college-level approval of any academic program changes (*e.g.*, change in degree requirements, new course proposals for program-specific courses);
- College-level adjudication of student problems as stipulated by institutional policies (*e.g.*, academic misconduct, grade mediation and adjudication, Appendix II problems)
- Coordination of intercollege graduate-degree programs wherever needed (*e.g.*, solicit feedback from administrators in the partner colleges for program assessment), as well as coordinate and lead annual or biannual meetings with the other college administrators to review the status of the program; determine the program budget for the new fiscal year; review the performance of the chair and when appropriate, oversee appointment of a new chair; negotiate with other PSU Associate Deans to resolve problems, etc.
- Serving on the Advisory Committee for Graduate Education (an advisory body for the Dean of the Graduate School consisting of all Associate Deans for Graduate Education at Penn State)

Specific College of Medicine-level responsibilities include:

- Assessing needs and implementing co-curricular professional development activities for graduate students
- Communicating and enforcing Graduate School policies in general
- Chairing monthly meetings of the Graduate Program Directors; this meeting provides:
 - o Sharing of best practices in graduate education
 - o Discussion of new opportunities in recruiting
 - Exploring joint educational efforts
- Recruiting interdepartmental and IGDP Program Directors
- Providing administrative oversight of Graduate Core Curriculum
- Exercising budgetary responsibility for the Genetics Graduate Program, the Cell and Molecular Biology Graduate Program, the Neuroscience Graduate Program and the Office of Graduate Education
- Managing the review of applications for fellowships, scholarships and awards associated with recruiting, Convocation and Commencement
- Providing oversight of and support to the Administrative Assistant for Graduate Education whose responsibilities include:
 - o Registration of all new graduate students
 - o Organizing and implementing New Student Orientation
 - o Oversight of Summer Tuition Assistance Program
 - o Management of all federal government issues related to international students
 - o Addressing health insurance issues for all students
 - o Providing administrative support for the Graduate Student Association, including
 - Graduate Research Forum
 - Career Day
 - o Providing administrative support for SURIP
 - o Room scheduling for > 60 graduate courses
 - Academic metric reporting for > 60 graduate courses
 - o Providing administrative support for the Graduate Core Curriculum
- Ensuring that accomplishments in graduate education are recognized by nominating graduate students and Graduate Faculty Members for college, university and national awards
- Serving as advisor to the Graduate Student Association
- Working with the College of Medicine Alumni Society to better connect with Graduate
- Working with Public Relations to highlight graduate education on our campus, locally, and nationally
- Managing applications to the Graduate Faculty
- Addressing problems between thesis advisers and students that cannot be resolved at the program level
- Oversight of review and assessment of post-baccalaureate credit certificate programs (the College of Medicine currently offers 4 PBCCs)

The Associate Dean for Graduate Studies is designated by the Dean or Vice Dean for

Research and Graduate Studies to serve as a member of several College of Medicine oversight groups including:

- MD/PhD Advisory Committee, member
- Clinical Research Training Program Advisory Committee, member
- Academic Integrity Committee, member (currently serving as chair)
- Woodward Steering Group, member
- Research Mission Group, member
- Disability Services Committee, co-chair
- Distinguished Educator Selection Panel

The Associate Dean also represents the interests of graduate education in a variety of additional settings including:

- Academic Team (currently serving as co-leader)
- Magnet Nursing Team
- Ad hoc committees and Task Forces (2009 responsibilities listed)
 - o Diversity Office Task Force
 - o LCME Task Force on Academic Environment
 - CTSA Education Subcommittee