HANDBOOK FOR THE GRADUATE PROGRAMS IN THE BIOMEDICAL SCIENCES

FOR STUDENTS ENTERING DURING THE 2019 – 2020 ACADEMIC YEAR

NOTE: This handbook contains general policy information for students and faculty in the 7 graduate programs in the biomedical sciences. It has material specific to the first semester as well as graduate study in general. Once students enter an individual program they will have a program specific handbook for policies and procedures unique to that program; those handbooks will still refer to policies included in this handbook. This handbook can be amended after the student has entered the program. Students and faculty will be informed when an amendment has occurred.

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I. Introduction

This handbook developed by the Health Sciences Center Office of Research and Graduate Education outlines the activities, requirements, and standards for students and faculty during the first year of graduate education for a PhD in the Biomedical sciences. The Biomedical sciences graduate programs (BSGP) include 7 degree-granting PhD programs:

1. Biochemistry and Molecular Biology
2. Cancer Cell Biology
3. Cellular and Integrative Physiology
4. Exercise Physiology
5. Immunology and Microbial Pathogenesis
6. Neuroscience
7. Pharmaceutical and Pharmacological Sciences

Students are admitted via a common admissions committee and process. Prior to selecting and entering into a specific degree-granting program, the students take a core curriculum providing general knowledge pertinent to the 7 degree granting programs, and rotate through at least 3 laboratories in order to select a mentor for his/her dissertation research.

By the end of the first-year students will:

- Integrate molecular, cellular, and integrative systems concepts
- Identify the relevant scientific literature for their proposed area of research
- Conduct and optimize select laboratory procedures
- Develop an oral presentation on a topic that is new to them
- Discuss relevant scientific ethical issues presented as case studies
- Apply responsible research practices to the conduct of their experiments
- Engage with fellow students and faculty and demonstrate teamwork

The individual PhD programs have additional learning outcomes specific to the advanced skills required of a PhD and the specific discipline of that program and the student's research.

This handbook also provides global policies and useful information common to all graduate programs and that will govern student activities throughout the PhD degree. If this information needs to be amended, students and faculty will be informed in writing of the change and will be governed by the new information. The information in this handbook supplements the information that can be found in the WVU Graduate Catalog. This catalog can be found online at: http://catalog.wvu.edu/graduate/. Students and faculty are responsible for the information in both the catalog and this handbook. The graduate catalog contains allowances for programs to have more specific or stringent standards. In those cases, this Handbook supersedes the Graduate Catalog. Once the student transitions into his/her dissertation laboratory and joins one of the 7 Biomedical graduate programs, a program specific handbook will be provided that will supplement this handbook.

II. Office of Research & Graduate Education

The Assistant VP for Graduate Education, and staff assistants are part of the HSC Office of Research & Graduate Education. The following will interact with you most on programmatic issues. Please meet the others on our website: http://www.hsc.wvu.edu/resoff/home/

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***NOTE**: The University and our Office will communicate with students only via WVU MIX email address. We will not use other email addresses. The MIX account must be activated. If the student does not exclusively use his/her MIX email account then the email must be configured to forward to the preferred account. Periodic checking of the MIX account will not suffice and students will be accountable for any missed communications. MIX email addresses do not expire. It is recommended that students continue to keep this account active after graduation for receipt of information related to their status as alumni.*

III. Entry into the First Year of the BSGP

All students interested in a PhD in one of the 7 BSGPs apply via a common application and a common admissions committee reviews the applications. The admission's committee is composed of representatives from each of the 7 BSGPs and 2 graduate student representatives. Applications are evaluated on the basis of overall GPA, GPA in science and math courses, a strong personal statement to describe their motivation for pursuing a PhD, a thorough description of research experiences, and 3 letters of recommendation. Applicants who have a breadth of coursework in chemistry, biology, and math through calculus are given preference. Qualified applicants are interviewed prior to a final decision on acceptance.

A. Student's Permanent File (information for students and programs)

Each student has a permanent file. This file contains the relevant academic and professional documentation outlined below. This file is kept both electronically (on SOLE) and in paper form in the Office of Research and Graduate Education. The electronic file has rigorous access limitation to protect a student's privacy. Graduate directors can see all files for students in their program only. Advisors and committee chairs can see the file for their student. Only staff in the Office of Research and Graduate Education can add or delete items in this file. University regulations dictate when this file can be destroyed; generally, after 5 years. The Office of Research and Graduate Education maintains some of this information indefinitely for use in

assembling trainee data for training grant applications and maintains contact information for alumni surveys evaluating their graduate program.

NOTE: Some graduate programs may choose to keep additional records of students. Graduate program files do NOT substitute for the permanent file in the Office of Research and Graduate Education. It is the student's responsibility to see that all required forms be received by this office for placement in the permanent file.

For a detailed list of forms and their due dates, see:

https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/

Do NOT stockpile forms. These forms are subject to change and only the most recent form will be accepted. Please go to the above website every time that you need a form.

Each file should have the following information organized as follows by the time they apply for graduation:

- Emergency Contact Information
- Application and Admissions: Application to Graduate School, offer letter, acceptance of the offer, and departmental decision form. If a student withdraws before completing the degree, this information will also be in this folder.
- Required forms: Student assignment form, academic status update, committee approval form, plan of study, record of passing the qualifying exam (if applicable) and the dissertation proposal defense (candidacy exam), IDP reporting forms (one for each year in the program), Dissertation advisory committee evaluations (at least one for each year in the program), program student evaluation (if applicable), and any forms to amend committee membership or the plan of study, and to transfer credits from another institution. Ultimately this folder will also have the Shuttle Sheet request form, the Shuttle Sheet, and the notice of acceptance of the dissertation by ETD.
- Academic issues: Letters placing students on probation, suspension or dismissal, letters of warning, leave of absence requests and forms documenting return from a leave, and any other issues related to academic and professional standards.
- Miscellaneous: Any other pertinent information regarding a student's progress through graduate school. This can include awards, documentation of presentations, and email correspondence that bears saving.

B. Registration

Schedule of courses: https://star.wvu.edu/pls/starprod/bwckschd.p_disp_dyn_sched

Registration Process

1. Point your browser to https://portal.wvu.edu/students
2. You will be prompted to enter your login credentials and complete the DUO two-factor authentication process. If your MIX email is jdoe@mix.wvu.edu then your Username is jdoe.

3. On the next page, click the yellow "STAR" tab on the top
4. Click "Student Services & Housing"
5. Click "Registration"
6. Click "Add or Drop Classes"
7. Use the drop-down option to select desired term. Click Submit.
8. Enter each CRN in the blocks and click on Submit Changes
9. You can review your schedule by selecting "Concise Student Schedule" under Registration.

***NOTE**: students may not take courses outside of the recommendation of the graduate program (i.e. physical education, music, dance) without the written permission of the Assistant Vice President for Graduate Education.*

IV. Financial Package and Fees

A. Stipend & Tuition Coverage

PhD students receive a stipend (currently $28,000), full tuition coverage, and WVU student health insurance, throughout their training period provided the student maintains a GPA of 3.0, successfully passes the qualifying examination and dissertation proposal, demonstrates excellent progress toward completion of PhD dissertation research, and is enrolled as a full-time student. The Office of Research & Graduate Education pays the stipends for the first, 22 months. On July 1 after the student's second year in graduate school, the payment of the stipend is shifted to the mentor's laboratory funds or individual or institution fellowships. If these financial sources become unavailable, the mentor will negotiate with his/her department and/or the Office of Research & Graduate Education for stipend support. Students in good academic and professional standing, should not expect a gap in stipend due to funding difficulties within the dissertation laboratory. Students who are in the program from 6 or more years and are not meeting timelines for completion are not guaranteed a stipend or tuition waiver. As students must be enrolled each semester until graduation, students for whom the stipend and waiver have been suspended will have to pay tuition from their own funds.

To receive/maintain a stipend and full tuition coverage, students must register for a minimum of 9 credits in the fall and spring semesters and for a minimum of 3 credits in the summer semester. Students must be registered in every semester until completion of the dissertation defense, or request a leave of absence, at which time his/her stipend and tuition coverage will be suspended.

Graduate tuition is split into 2 portions: University tuition and College tuition. University tuition is the same for all graduate students, while college tuition varies across the WVU colleges and schools. The student receives a waiver of University tuition, but the amount of college tuition is offset by a scholarship placed in the student's account. In certain circumstances this can cause problems in the student's account. One is if the student changes their course enrollment multiple times and leaving gaps of a few or more days prior to the end

of the enrollment period. The second is during summer session. The Office of Research and Graduate Education plans for students to enroll in 3 credits during summer session and only provides a scholarship for that amount of college tuition. If a student enrolls in more than 3 credits they must inform the Office so that the scholarship can be adjusted. Problems with student accounts should be directed to Ms. Joyce Turpen.

***NOTE**: Graduate study is a full-time commitment. Outside employment will detract from the academic efforts needed to complete the degree and is not allowed.*

B. Student Health Insurance

Coverage of health insurance is provided as part of receiving a Graduate Assistantship and coverage will start August 11, 2019. The insurance only covers the student. The cost of adding family members to the policy must be borne by the student. An on-campus representative will be at the orientation in August to discuss the policy with the students. The student is advised to become familiar with the terms of this coverage and make sure that it is satisfactory to meet their medical needs. If it is not, they may purchase separate insurance, independently. Students may choose to be covered by a parent or spouse's policy. In this case the student must fill out the University waiver (http://studentinsurance.wvu.edu/waiver) to avoid being charged for the University student insurance. International students should pay particular attention to the terms of the student insurance, as coverage for health-related expenses in the United States is very different than in most other countries.

Questions or inquiries about health insurance: Aetna customer service: 1-866-654-2338, www.aetnastudenthealth.com once at this website, find our institution. Email address: sio@mail.wvu.edu or call (304) 293-6815.

C. Fees

Students are responsible for paying the University student fees unless they are covered by an individual fellowship. Failure to pay fees on time will result in a penalty that must be paid by the student. Fees are due prior to the start of each semester and summer session. Fees can be as a lump sum or sum or through the WVU monthly payment plan administered by CashNet (https://studentaccounts.wvu.edu/payment/tuition-payment-plan).

V. Orientation

Graduate studies start with a five-day program known as Boot Camp that prepares the student to successfully transition into graduate studies, provides time to interact personally and at social events with faculty and resident students, and for team-building activities. Attendance of the entire orientation and all its activities is required. The objectives of the Boot Camp experience are for the student to be able to:

1. Decipher the experimental design of a journal article
2. Present a figure from a journal article

3. Describe expectations on performance in research
4. Obtain journal articles when not within the WVU computing system
5. Use SOLE to obtain course information and graduate program information
6. Know when and how to use the Carruth Center
7. Work in a laboratory in compliance with Federal and WVU safety rules
8. Know how to make effective figures for presentations
9. Demonstrate good oral presentation skills
10. Describe the purpose of an individual development plan, complete the plan, convey the results to their mentor, and make plans for the future to improve their skills
11. Describe the factors that play into establishing a good reputation in science
12. Handle experimental animals and operate in the animal quarters in compliance of federal and WVU rules
13. Join LinkedIn and the WVU Biomedical group
14. Select a laboratory for their first rotation

In addition, the students should have met and interacted with both their faculty and student advisors.

VI. Common Core Curriculum and Activities

A. Core Courses

1. Fall Semester of the First Year

Students take a common curriculum for the first semester in graduate school. The required courses are:

Course	Code	Credits
Foundations for Contemporary Biomedical Research 1*	BMS 747	4
Foundations for Contemporary Biomedical Research 2*	BMS 777	4
Cellular Methods	BMS 706	1
Scientific Integrity	BMS 700	1
Biomedical lab experience	BMS 702	2

*These courses run consecutively.

Foundations for Contemporary Biomedical Research 1 and 2

The purpose of these courses is to impart a fundamental understanding of the functional components of a cell, and the basis for regulation of cellular processes and organ systems. The knowledge base is developed in an interactive faculty-student environment that requires interpretation and rational speculation to apply general concepts to specific situations and stimulate creative scientific thought.

Objectives

- Impart a fundamental knowledge base
- Integrate molecular, cellular and physiological concepts
- Illustrate relevance through clinical examples
- Illustrate current relevance via the literature
- Stimulate student engagement and critical thinking

Assessable Skills

- Understand important concepts, their significance and illustrate mastery with examples.
- Apply the conceptual principles discussed to novel situations.
- Design and interpret experiments to test molecular, cellular and physiological mechanisms.
- Verbally articulate understanding of concepts during scientific discussion(s).
- Demonstrate teamwork and problem solving.

Cellular Methods

The goal of this course is to familiarize the first year Biomedical sciences students with current technologies found in the literature but also typically used by students in the biomedical programs. The lectures in this course are presented by graduate students and postdoctoral associates at the Health Sciences Center. It provides a teaching opportunity for these trainees and this type of teaching is particularly germane to trainees considering a career in industry where they may need to give presentations on new instrumentation or techniques.

Objectives

The students will be able to:

- Compare and contrast available techniques that are best suited for addressing a particular research inquiry
- Describe the basic steps used in a particular technique
- Be cognizant of the limitations of those techniques

Scientific Integrity and Scientific Rigor and Ethics

Graduate students at West Virginia University are required to meet particular federal and University-wide standards regarding the responsible conduct of research (RCR) and rigor and reproducibility. To meet these standards, all graduate students undergo this training during the first 2 semesters at WVU. These courses cover the required subjects specified by the National Institutes of Health (NIH) for RCR and an introduction to rigor and reproducibility in experimental design. In addition, students must complete an online RCR course offered by the Collaborative Institutional Training Initiative (CITI). CITI training can be completed at any time after registering for classes but it must be completed within 30 days of the beginning of

the initial semester- the passing grade is 80%. Failure to do so may affect the student's ability to continue in the laboratory.

Additional training in both RCR and rigor and reproducibility will occur during journal clubs, seminars/forums, and in laboratory meetings and discussions.

Biomedical Lab Experience

The objectives of this course are to:

1. Select a faculty mentor to guide their dissertation research
2. Compare the research area of other laboratories in the Health Sciences Center so that the student can interact scientifically with the members of that laboratory
3. Identify research expertise of other laboratories in the Health Sciences Center so that the student can interact scientifically with the members of that laboratory.
4. To select faculty members for the student's dissertation committee.
5. Describe and apply new techniques for biomedical research to the student's scientific research.

Prior to the orientation boot camp, incoming students receive a list of faculty available for rotations and a description of their research. During boot camp, time is allotted to meet these faculty. The procedures for picking rotations and the schedule for the rotations are in the course syllabus. In general, rotations start on Monday of the first full week of classes and end prior to exam week. Students should expect to work the Monday and Tuesday of the week of Thanksgiving. Students who have not matched with a dissertation mentor by December of Year 1 will enroll in this course in the spring semester and conduct rotations until a match is finalized. The appendix contains the sample evaluation form for this course.

2. Spring Semester

Students who have chosen a graduate program take BMS 701: Scientific Rigor and Ethics, courses and activities as required by that program, and enroll in the 797 research credits that are associated with that graduate program. The program director, the program handbook, and the dissertation mentor should be consulted on the courses to take.

Students who have not yet entered a graduate program and that may still need to do additional short rotations take the following curriculum:

Course	Code	Credits
Molecular Genetics	BMS 715	3
Scientific Rigor and Ethics	BMS 701	1
Elective		3-4
Research	BMS 797	1-2

The student's first semester faculty advisor will help with the choice of elective that will build toward emerging areas of interest. A suggestion for the elective is one of the program specific courses that are offered for first year students. Students need to register for a total of 9 credits to be a full-time student.

3. Summer Session

Year 1

During the summer session, students must register for between 1 and 6 credits of research using his/her programs course code. Please consult the website for the Office of Graduate Education and Life for information on the advantages of registering for differing numbers of credits. It affects both FICA withholding and the cost of student fees.

http://graduateeducation.wvu.edu/forms-procedures/academic-services-policies-and-procedures/summer-enrollment-guidelines

Year 2

The second summer, all students enroll in the scientific writing course:

Course	Code	Credits
Scientific Writing	BMS 720	2
Research	Subject code for graduate program 797	1

Scientific Writing

This course is divided into 2 parts. The purpose of the first part of the Scientific Writing course is to introduce students to scientific writing using a standard journal format and a simple set of data. Students may use their own data or a sample data set that will be provided to write a paper based on the format used in the Journal of Neuroscience. Although, not all students will submit manuscripts to this journal, it provides a relatively straightforward structure and format that can be generalized to other journals. The background, details, methods, and data analysis in the paper will come from the student's own research area and will be evaluated by their mentor.

The purpose of the second part of the Scientific Writing course is to introduce students to the grant writing process using a standard NIH predoctoral grant application format and a simple set of preliminary data. Students write the scientific portion of a grant proposal based on the format used by the NIH for a Ruth L. Kirschstein National Research Service Award (NRSA) Predoctoral Fellowship (F31). The scientific details in the grant application will come from the student's own research area and will be evaluated by their mentor. All 7 biomedical PhD granting programs use the predoctoral fellowship format for the dissertation proposal defense (or candidacy exam). Students are expected to use this writing course to draft this document for their exam.

B. Experiential Learning (BMS 707)

All students are required to take 2 credits of experiential learning prior to graduation. The syllabus in the appendix provides more details on this course. The overall goal is for students to participate in an activity that better informs either their research questions or a career goal. This activity needs to be something that would not otherwise occur in the course of the

student's dissertation research. Students are encouraged to think broadly and develop unique experiences. A folder on SOLE (under Health Sciences Center Graduate Programs -> Biomedical Graduate Program) contains sample ideas. For this course, 1 credit hour is defined as 45 hours in the activity. This is a loose guideline and should not be considered the upper limit of time spent. Students can choose to enroll twice for 1 credit each time or enroll once for 2 credits. Financial assistance will be available to defray the cost of these experiences. Students must complete an application (available on sole) and have the activity approved prior to enrolling in the course.

C. Transfer of Graduate Credits/Courses

It is not necessary for PhD students to transfer credits of graduate level courses taken at another institution. Upon approval of the student's dissertation advisory committee and the PhD program director, a student may forego required courses. If this is because of a course taken previously, at a graduate level and with a grade of B or better, then transferring the credits will allow the old course to populate that requirement on DegreeWorks.

D. Other Program Activities

1. Seminars and Journal Clubs

In addition to formal course work in the first semester, students will attend weekly seminars and journal clubs. During each rotation, the student will attend the seminars and journal clubs that are attended by the members of their host laboratory or as recommended by their host mentor. Students are welcome to attend additional seminars that are of interest but they should be keenly aware not to spend undo amounts of time in seminars at the expense of getting to know the laboratory and completing assigned laboratory work.

2. Individual Development Plan (IDP)

The IDP provides resources to help students evaluate skills and interests in:

- Scientific Knowledge
- Research Skills
- Communication (writing and speaking)
- Professionalism
- Management and Leadership
- Responsible Conduct of Research
- Career advancement
- Proactive planning for experimental problems
- Evaluation of advisory committee meetings
- Evaluation of interactions with mentor
- Health and Wellbeing

This information will be used to build the necessary skill set for timely progress in the degree, and ultimately for success in taking the next steps post-graduation. It also provides a forum for

the student to have more productive meetings with their advisor to help in the conduct of their research. The role of the dissertation mentor is to help the student to either achieve these skills. The IDP is to be reviewed annually.

The Biomedical graduate programs use a series of 3 IDP forms based on year in graduate education. All incoming Biomedical students will complete the Year 1-IDP and discuss their results with a faculty advisor during Boot Camp, the week before school starts. At the beginning of year 2, the student uses the IDP for 2nd year students and reviews that with the research advisor. The IDP is reviewed annually with the dissertation advisor and a 3rd IDP form is to be used for all subsequent interactions. Completed forms are to be placed in the student's permanent file.

Upon approval by the Assistant Vice President for Graduate Education, graduate programs may develop and use their own version of this process.

VII. Selection of Faculty Dissertation Mentor and Graduate Program

A. Selection of Faculty Dissertation Mentor

The student selects a dissertation mentor from an approved list of available mentors and provided that they have completed a laboratory rotation with that faculty member. Students have the opportunity to complete this by December of Year 1 or during the spring semester. It is a requirement for a student to match with a faculty mentor who will sponsor the student in the conduct of their dissertation research. Students are responsible to find/match with a faculty mentor. Lack of fulfillment of this requirement, by the end of the spring semester or at any other time during your graduate studies if a change of mentor occurs, may lead to dismissal from the graduate program.

Available mentor list:

Available mentors are research faculty, primarily tenured or in the tenure-track, who would like to recruit a graduate student into their laboratory and who are designated as an available mentor by the Office of Research and Graduate Education because they meet the criteria outlined here.

<u>Procedure for developing the available mentor list:</u>

1. The available mentor list is updated annually. Each year in March or April, the Office of Research and Graduate Education contacts department chairs and graduate directors to provide names of individuals for consideration as an available mentor for the following academic year.

2. The Office then evaluates the faculty on this list based on the criteria below. The final available mentor list is at the discretion of the Senior Associate Vice President for Research and Graduate Education.

3. Faculty selected to be on the available mentor list will be contacted in May to provide a research summary that will be given to the new students in the summer prior to their enrollment. If they prefer not to recruit a student, they can decline at this time.

Criteria:

***NOTE**:* newly hired assistant professors in the tenure-track are generally included on this list because of the availability of start-up funds for research and the expectation that they will be successful in acquiring extramural support.

To mentor a student, the faculty investigator should:

1. Have a project in mind for the student's dissertation, have space in the laboratory, and time to mentor the student.
2. Have extramural funding to support the student's stipend for the last 3-4 years of their degree or the demonstration of submitted and pending grant applications within the past year as well as a track record of funding to indicate that there is a likelihood of success in securing funding
3. Have an active research laboratory as identified by research supply money and recent (within one year) publications.
4. Have regular graduate faculty status (NIOSH scientists can have associate status)
5. Not have a student receiving stipend support from the Office of Research and Graduate Education after June 30 of the student's 2nd year in the program.
6. Have permission of their department chair to be on the list.

Other considerations taken into account when assigning student mentorship:

1. Association (by the participating faculty mentor) with Institutional Fellowship Opportunities, such as an NIH T32 training grant, or a COBRE
2. Student supported by an internal fellowship such as the Ruby
3. Number of current students in the investigator's laboratory
4. Mentor's track record of successful and productive training of graduate students (if applicable)

<u>Selection process:</u>

To select a mentor for their dissertation research, students complete three 5-week rotations during the fall semester in the laboratories of faculty from the available mentor list. The process for selecting rotations is described in the syllabus for BMS 702 Biomedical Lab Experience that can be found in the appendix. At the conclusion of each rotation, the student can discuss possible dissertation projects with the mentor. The student should not ask the faculty member if they could join their laboratory. Note, that this discussion does not mean that the student will choose that laboratory, or that the rotation mentor should hold a spot for the student, it is simply an information gathering session. After the last rotation, the student considers the 3 rotations, and rank orders them as choices for a dissertation laboratory. The student's first year advisor, Graduate Directors, Departmental Chairs, and the Office of Research & Graduate Education can assist the student in this process. The student may choose to eliminate one or more rotation mentor from their list, and can indicate that if they aren't

placed in the other choices that they would prefer to do a fourth rotation in the Spring semester. The choices are submitted to the Assistant Vice President for Graduate Education, who then makes the assignments in consultation with the requested mentor and possibly the student if they are unable to match with their first choice. Final acceptance into the mentor's laboratory is at the discretion of the Office of Research and Graduate Education and the mentor, and requires completion of the Student Assignment Form. Graduate directors and department chairs are informed of the final selection for both rotations and final mentor assignments as soon as each assignment is completed. They may share this with their faculty.

Students and available mentors are strongly warned not to make agreements or to suggest agreements prior to this final selection process. This eliminates potentially better matches in subsequent rotations and results in confusion for both faculty and students.

Policy on number of rotations:

All students should plan on doing 3 rotations regardless of how soon they are happy with a laboratory experience or their intent to work with a specific faculty member. This process is important in viewing different mentoring styles, meeting more faculty and students, and learning more about research at the HSC. In rare circumstances such as but not limited to, a long-term technician entering graduate school, rotations may be abbreviated or eliminated, or the rotations may be with faculty who are not recruiting a student that year, but may either collaborate with the lab or be a potential member of the student's dissertation advisory committee. The decision and the terms of that decision to permit a student to forgo or abbreviate rotations must be approved in writing by the Assistant Vice President for Graduate Education and placed in the students file.

B. Selection of a Graduate Program

After matching with a faculty mentor, students select a graduate program based on their individual career interests and the advice of their faculty mentor. Successful entry into a graduate program requires approval of that graduate program. The graduate program director signs the Student Assignment Form to indicate this approval. This form is placed in the student's permanent file.

Upon entry into a specific PhD training program, the student is now under the auspices of that graduate program until completion of the PhD degree. The table below lists the seven PhD degree-granting graduate programs and their directors.

Graduate Programs	Graduate Director
Biochemistry & Molecular Biology	Vishy Ramamurthy
Cancer Cell Biology	Scott Weed
Cellular & Integrative Physiology	Stanley Hileman
Exercise Physiology	John Hollander
Immunology & Microbial Pathogenesis	Mariette Barbier
Neuroscience	Randy Nelson
Pharmaceutical & Pharmacological Science	Werner Geldenhuys

VIII. Graduate Policies for Biomedical Graduate Students

A. Selection of the Dissertation Advisory Committee

Due – Beginning of fall semester of second year
Form - https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/
Place in student's file - yes

The Dissertation Advisory committee needs to be selected by the beginning of the fall semester of the second year, and must be approved by the Assistant Vice President for Graduate Education before the first meeting. Dissertation Advisory committees contain 5 faculty members; one additional over what is required by WVU. These members are selected by the student in consultation with his/her dissertation mentor. Agreement to serve on the committee and approval of the committee must be documented by the Dissertation Advisory Committee approval form (at above link) prior to any meeting of the committee. Per University guidelines, one member of this committee must be from a program/discipline different from the student's program. This is to ensure that students receive feedback from a general scientific audient and that they can explain their work clearly outside their discipline. The majority of the members must be regular members of the graduate faculty. The Chair of the committee must be a full-time WVU employee. Committees can have co-chairs, only one of the co-chairs needs to be a regular member of the graduate faculty. Students whose major advisor is at NIOSH would need a co-chair if the program policy allows the advisor to chair the committee. This policy can be viewed at:

http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#committeestext

The inclusion of the dissertation mentor as a member of this committee varies between the 7 Biomedical graduate programs. The student should consult the individual program handbooks for the program policy.

The dissertation advisory committee is the group that administers the candidacy exam (also called the dissertation proposal defense) and the final defense.

B. Advisory Committee Meetings

1. Schedule for Meetings

Due – first meeting should occur by the end of the first semester of the second year
Form - https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/ or individual graduate programs may choose to use their own evaluation form or letter.
Place in student's permanent file – yes

Committee meetings must occur at least once per year and an evaluation of student performance in that meeting must be done in writing, with the signatures or evidence of

approval by all committee members and with the student's signature. The evaluation is then placed in the student's permanent file.

2. Research Performance Progress Report (RPPR) for Committee Meetings

Due – given to committee members the day before the meeting
Form - https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/
This follows the RPPR guidelines used for most NIH grants.
Place in student's permanent file – yes
Estimated time to complete this paperwork – 8 hours

Prior to committee meetings, students need to assess their accomplishments since the last meeting. The report, not to exceed 2 pages single spaced, is given to the committee members the day before the meeting. In brief, the student describes the specific aims for their dissertation, any changes to those aims and when the change was approved by the committee, activities under each aim and the significant results and key outcomes of those activities (figures of results can be provided separately and are not counted in the 2 pages), publications, research plans for coming year, training and professional development activities that occurred during the reporting period (should be at least 2) and plans for professional development during the coming year, if known. Students who have a pre-doctoral fellowship may substitute the RPPR for that fellowship if it was submitted within a month of the committee meeting. Students must add the professional development activities completed during the reporting period if they are not part of the fellowship RPPR reporting.

C. Plan of Study

Due – End of fall semester of second year
Form - https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/
Each program has a template that facilitates the inclusion of required coursework. Choose the template for your graduate program.
Place in student's file - yes

The Plan of Study is the formal agreement between the faculty and the student as to courses that are required for completion of the degree. Each student has a program-specific plan of study in DegreeWorks (https://registrar.wvu.edu/academic-records/degreeworks) that lists the programmatic requirements. This plan of study further specifies specific coursework for when there is a choice provided in the DegreeWorks' plan. It can also indicate when an exception can be made to required coursework. For a student to graduate, their academic transcript must contain all required coursework on their DegreeWorks' plan or have written validation via the plan of study form that this coursework is no longer required. In addition, the transcript must have the specific coursework requirements in the Plan of Study. Once the Plan of Study is accepted by the committee and graduate program, changes can be made using the modification form at the site above, should a new course become available or other changes become necessary.

D. Full-Time Student Status and Enrollment

To receive a stipend, students are required to register for a minimum of 9 credits for the fall and spring semesters and 3 credits for the summer semester. Credit hours exceeding 16 require prior approval by the Associate Provost of WVU. If a student fails to register as a full-time student in a semester or summer session, his/her stipend will be terminated until they regain full-time student status. Even if not on a stipend, all students must be enrolled every semester they are in residence at WVU until they complete all graduation requirements.

E. PhD Examinations

The examinations that must be passed for partial fulfillment of the PhD degree are the qualifying examination (if the program has one), the research proposal (candidacy exam), and the dissertation defense. The individual graduate program conducts these examinations.

1. Qualifying (Preliminary) Examination

Due – see program handbook
Form - https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/
Place in student's file - yes

The Qualifying Exam is usually given after most formal coursework has been completed. In general, the qualifying examination will test the student's scientific knowledge pertinent to the chosen PhD training program. The individual graduate programs conduct these examinations at different times and use different formats. Upon completion of this exam, committee members sign the appropriate form, and it needs to be placed in the student's file.

2. Candidacy Exam (Dissertation Proposal Defense)

Due – on or before the last working day of Year 3, which is usually the 3rd Friday in August or the date specified by the graduate program – whichever comes first
Form - https://www.hsc.wvu.edu/resoff/graduate-education/policies-and-forms/forms/
Place in student's file – yes

Successful defense of a proposal outlining the student's dissertation research marks the entrance to PhD candidacy. Timely completion of this benchmark not only provides a guide for the remainder of the research but also provides an excellent springboard from which to apply for an external fellowship. The Proposal Defense begins with the preparation of a grant application in the style of a National Institutes of Health (NIH) pre-doctoral fellowship. This will be drafted during the *Scientific Writing* course. The proposed research is presented in a formal seminar to the faculty, graduate students, and other interested people, followed by an oral defense of the proposal to the student's dissertation committee.

It is recommended that the proposal be defended in the fall semester of the student's third year in graduate school. If the defense is not successful, the student may petition his/her dissertation committee to retake the exam. Successful defense of the research proposal must occur on or before the last working day of Year 3, which is usually the 3rd Friday in August.

Failure to pass the defense by this date will result in dismissal from the graduate program. Students with extreme circumstances may petition for a delay in this deadline. The petition must occur in writing to the Assistant Vice President for Graduate Education and must include a strong rationale for the delay. Individual graduate programs may require that the Dissertation Proposal Defense occur at an earlier date and their date supersedes the deadline in this handbook. With successful completion of the dissertation proposal, the student advances to candidacy for the PhD.

Before or usually after defense of the proposal, the student should seek a fellowship from a national funding agency. These include agencies, such as the NIH (F31, F31 diversity) and the American Heart Association. Students who choose to apply for a pre-doctoral fellowship should consult the Health Sciences Graduate Programs site on SOLE for helpful hints and guides on how to construct this application. The graduate program director is required to provide the Description of Institutional Environment and Commitment to training and should be consulted early in this process.

IX. Work Schedule, Illness, Vacation, and Leave of Absence Policy

The PhD degree is awarded based on completion of original dissertation research and not time served in the program. Undue time spent away from the University will hamper your progress in research.

A. Work Schedule

The first year of study focuses primarily on didactic education. In the fall semester, students can expect to follow the academic calendar of the University for the December holidays. During the week of Thanksgiving, University classes are not in session but research is still going on. The student is expected to discuss their work schedule for this week with the faculty member with whom they are rotating. The same is true in the spring semester; students still rotating in laboratories should discuss expectations for spring break with the host mentor. Expectations vary between laboratories; students and mentors should discuss this at the beginning of the rotation. Mentors are made aware of the guideline of approximately 20 hours per week in the laboratory during the short rotations. For safety, students should avoid working in the laboratory alone.

B. Illness

Graduate students do not receive a specified number of sick days per pay cycle or calendar year. Absenteeism from classes, graduate program activities, and the laboratory should be reserved for true illnesses that are contagious or completely block the ability to function. Headaches and small malaises should not be used as reasons to not be in class or lab. The student's responsibilities remain the same and missed work will need to be made up possibly by working weekends and evenings. Absenteeism from classes and other events needs to be communicated to each faculty member coordinating a class or event.

C. Vacation

Once a student enters a specific graduate program, the vacation schedule for the University calendar no longer applies. Expectations regarding vacations need to be discussed with the mentor. These expectations are likely to vary among research laboratories, so it is important to establish these expectations upon entry in the laboratory.

D. Leave of Absence

The Health Sciences Center has a defined policy to deal with extended periods of time outside of the laboratory or class, generally greater than 2 weeks. Termed a leave of absence, a student may need to take such a leave due to grave illness, pregnancy, or family crisis. Students should consult this policy when considering such a leave. In some circumstances, the leave may be imposed upon the student administratively due to academic issues or policy violations. Procedures for this are detailed in this policy and there are forms for documenting all types of leave and any expectations or requirements upon the student's return.

Grading and handling of courses during a leave of absence

When a student goes on a leave of absence, whether less than 1 month or a longer leave without stipend, issues develop regarding the grading of courses when the leave begins mid semester. To a large extent this will need to be handled on a case-by-case basis. For defined courses, the student will need to work with the instructor to come up with a strategy and generally will need to take an I. Courses like research and seminar (when used to monitor attendance) generally do not have a mechanism to fulfill an incomplete. If the length of the leave is known and it is before the deadline to withdraw, it would be best for the student to withdraw from these courses during the semester. If that deadline has past, a student in good standing should be able to receive a grade reflecting their participation prior to the leave especially when the course is graded S/U or P/F. Journal clubs can be handled by having the student write summaries of papers that were missed. If the student is having a major medical crisis and can't work during the leave, then either grade them for the time in the course, or give an incomplete and come up with a protocol for making up the work.

X. Academic and Professional Standards

A. Review of Student Performance

Students must be evaluated each year for performance in alignment with the academic standards listed below and any additional standards specific to their degree program. This evaluation can be solely by the dissertation advisory committee or can also include a general program review of student progress. The evaluation must be documented in writing, include the student's signature, and be placed in the student's file on SOLE.

B. Academic Standards

1. Standards

It is expected that students will perform satisfactorily on all required courses. To remain in good standing in the PhD program a student is required to maintain the following standards:

- An overall grade point average of 3.0 in graduate level coursework. **Note,** that this is higher than the university standard of 2.75.
- Removal of any incomplete grades within one semester or summer session of their award, unless special permission is granted by the Assistant Vice President for Graduate Education. Failure to remove an incomplete within one semester results in a permanent F on the student's transcript and this F figures into the GPA.
- Satisfactory written comments describing the student's performance in short rotations, in research, and in general graduate program interactions throughout their tenure in the PhD program.

Failure to comply with these standards will result in the student being placed on academic probation and may result in dismissal from the graduate program. Note, that unsatisfactory written comments, alone, are sufficient to result in academic probation and/or dismissal.

2. Grading System and Reporting of Grades

Graduate courses are graded as follows: A, B, C, or F, and P (pass) or F (fail). The Course Coordinator may submit letter grades with + or -, but the grade point average (GPA) is calculated using the basic letter grade. Grades of F are not acceptable for course credit toward a graduate degree but are used in calculating the GPA. Letter grades are given for the short lab experience in Year 1. Research 797 is graded S/U; U's in research are not counted for the calculation of the GPA. The first unsatisfactory (U) grade for 797 results in placement of the student on probation; a second U in research 797 is grounds for dismissal from the graduate program. Please consult the graduate catalog regarding the grade of D (http://catalog.wvu.edu/graduate/advisingcoursesdegrees/advising_and_evaluation/#gradestext).

The grade of Incomplete (I) is given when the instructor believes that the course work or other required programmatic activity is incomplete. All incompletes must be removed within the next semester of the calendar year; however, an individual instructor may require their removal within a shorter time period. Students who receive an incomplete grade must contact the faculty member who issued the incomplete to discuss its removal. If an incomplete is not rectified within the next semester, it will be changed to a grade of F (designated IF on the transcript) or in the case of 797 research to a U.

Because the annual committee meeting (or in some programs or situations semiannual or more frequent meetings) are a required part of the 797 course, failure to have this meeting can result in the assignment of an I or a U. This will need to be remediated per the university policy.

***NOTE**: Students cannot graduate with a D or F grade on the Plan of Study or transcript. The course must be retaken and the grade brought into the acceptable range. Both grades will count toward the GPA on the transcript, and the higher grade will be placed in the Plan of Study. Students should be aware that WVU will not allow a graduate student to graduate with a GPA below 2.75. Thus, recovering from an F even if the student repeats the course is very difficult.*

C. Professional Standards

Graduate students in the 7 Biomedical graduate programs, the MS in Biomedical Sciences, the MS in Health Sciences, and first year students in the Biomedical science graduate program are expected to adhere to the following standards of behavior throughout their tenure in graduate school. This code governs student behavior in classrooms, research endeavors, academic and professional gatherings and travel, and in their daily conduct outside of the University. In addition to the code outlined below, all students will uphold the WVU Student Conduct and Discipline Policy. This code can be found at:
http://campuslife.wvu.edu/office_of_student_conduct

1. Academic Integrity

Students will:

- not plagiarize the work of others either by directly copying that work or by summarizing the thoughts of others as their own;
- not cheat on any examinations, on academic assignments and activities, and will not provide unauthorized help to others during an examination or graded academic assignment;
- not alter examination scores, answer sheets, other graded materials, or their academic record;
- adhere to the University policies on academic integrity (http://catalog.wvu.edu/graduate/enrollmentandregistration/#academicdishonestytext)

2. Scientific Integrity

Students will:

- have actually carried out experiments as reported;
- represent their best understanding of their work in their descriptions and analyses of it;
- accurately describe methods used in experiments;
- not report the work of others as if it were their own;
- adequately summarize previous relevant work in their publications;
- when acting as reviewers, will treat submitted manuscripts and grant applications confidentially and avoid inappropriate use;
- disclose financial and other interests that might present a conflict-of-interest in their various activities such as reporting research results, serving as reviewers, and mentoring students;

- adhere to the University Research Integrity Procedures that can be viewed at: http://www.wvu.edu/~lawfac/mmcdiarmid/aic/Final%20RIC%20Policy%20WVU%205-9-11.pdf

3. Scientific citizenship

Students will:

- strive to provide timely, efficient and high-quality work;
- function as an effective and respectful team member in the performance of collaborative research;
- strive to always acknowledge the contributions of their co-workers;
- strive to keep all work areas clean, organized, and conducive to high-quality research;
- respect shared work areas and reagents and insure that steps are taken to replenish reagents when they are in low supply;
- refrain from activities that might be disruptive to the work of others, including playing music, conversation, telephone calls;
- be attentive in presentations by their colleagues and provide constructive criticism as appropriate;
- seek and accept criticism without reprisal or defensiveness;
- strive to address and remedy situations as they arise and follow through on all promises and commitments to co-workers;
- wear appropriate clothing in the laboratory and other research settings that is consistent with federal, state, and University regulations;
- speak-up and report any practice, condition, or situation, that may cause harm or that is against federal, state, and University regulations;
- when traveling as a representative of the University and laboratory, the student will behave in a professional manner, uphold the rules of the laboratory with respect to the sharing of data, report expenses in a truthful manner, and refrain from frivolous use of travel funds for meals or modes of transportation that are unnecessary.

4. Professional interactions

Students will:

- strive to increase their knowledge and expertise in order to maintain qualifications consistent with the highest standards available in their discipline;
- accept and adapt to the continual change inherent in the creation and delivery of knowledge;
- be appropriate in dress, language and demeanor at all times and avoid language and dress that is offensive to others;
- respect and protect all students', staff, faculty, study participants', and patient's rights to privacy and confidentiality;
- minimize personal text messaging, e-mailing, telephone calls, and social media while at work;
- respond to all communications in a timely manner;

- listen carefully, and be thoughtful and respectful in all forms of communication and during the attendance of seminars;
- provide training and experience to advance the scientific skills and knowledge of ethical research practices for any trainee under their supervision;
- treat all individuals in a caring, respectful, professional, and empathetic manner.

D. Graduate Programs Committee on Academic and Professional Standards (GP-CAPS)

1. GP-CAPS Membership

During the first year in graduate school, student compliance with these academic and professional standards is monitored by GP-CAPS. This committee has representatives from all 7 Biomedical PhD programs and the Clinical and Translational Science graduate programs. Following the first year, issues related to academic or professional standards are first evaluated by the program faculty and then for issues of dismissal or appeals by GP-CAPS.

2. Student Appeals Policy

Students have the right to due process in all decisions regarding their grades, evaluations, and status in graduate school. Appeals of decisions regarding the above must follow a standard set of procedures. Procedures for student appeals can be found in the Graduate Catalog.

3. Interface between GP-CAPS and Graduate Programs in Implementing Academic and Profession Standards

Graduate students who fail to achieve a GPA of 3.0 or better in the first semester core curriculum are placed on probation or dismissed by GP-CAPS, depending on the severity of the grade point average deficit. If a student meets the terms of the probation by the end of the spring semester, GP-CAPS will remove them from probation. The program will be informed of this change in status and the letter will be placed into the student's file. If the student does not achieve the required benchmarks and/or if the terms of his/her probation extends beyond 1 semester, the student's graduate program will be requested to review the student's academic record and make a recommendation to GP-CAPS. GP-CAPS will then review this recommendation and make the final decision regarding the student's status. This can involve upholding the programmatic recommendation or making minor or major changes in the terms of the student's continuance in graduate study or dismissal from that program or the biomedical programs as a whole. As with all academic sanctions, the student has the right to appeal.

XI. Graduation Requirements

A. Successful Completion of the PhD Degree Requires:

1. 3.00 GPA, no un-remediated grades of D (rare) F, or U
2. Terms of probation have been completed

3. Completion of the approved Plan of Study
4. Approved dissertation advisory committee
5. Proper registration and payment of fees
6. Passage of the benchmark exams:
   a) Qualifying (preliminary) Examination – if applicable
   b) Candidacy Exam (dissertation proposal defense)
   c) Dissertation Defense – submission of Shuttle Sheet request and signed Shuttle Sheet
7. Annual reports of completion of the IDP and advisory committee meetings
8. First-Author manuscript – at least one based on dissertation research published or in press
9. Electronic Submission of Dissertation
10. Application for Graduation and Diploma Form
11. Exit interview with the Assistant Vice President for Graduate Education

NOTE: the information in the student's permanent file is used to certified that all programmatic requirements are complete.

B. Enrollment in the Final Semester

Students must be enrolled in the semester or summer session in which they defend their dissertation and submit it to ETD. The number of credits depends on whether the student is continuing to receive a stipend. Students do not need to be enrolled in the semester in which they choose to attend graduation. For instance, a student who defends their dissertation in December and submits their dissertation to ETD prior to the start of the spring semester, does not need to register during the spring semester in order to participate in graduation.

NOTE: if a student is defending and leaving the university within the first 5 weeks of the fall or spring semester, please consult with the Office of Research and Graduate Education regarding your health insurance premium.

C. Dissertation Defense

The student defends his/her dissertation research for the PhD degree by writing a dissertation, presenting it orally in front of a public forum, and defending it in private to his/her dissertation committee. Dissertation research must be original and make a significant contribution to the scientific literature. To pass, the student must receive the approval of 4 of the 5 members of their committee. Finally, the student is required to electronically submit the dissertation to the Electronic Thesis and Dissertation (ETD) program at WVU - http://thesis.wvu.edu/.

NOTE: *All committee members must be present at the defense. Please see the University regulations controlling this exam.*
http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#thesesdissertationstext

D. First Author Publication Requirements

To be competitive for future fellowships and career opportunities, the student should have at least 2 first author papers and 1 or more co-author papers from their dissertation research. The total number of each does vary between disciplines and the nature of the research questions. Students should discuss this with their advisor, dissertation advisory committee, and program director to clarify expectations. To ensure that all students have a record of productivity, the student must have at least one first-author manuscript based on their dissertation research in press or published prior to defending their dissertation. In the case of joint first-author manuscripts, the manuscript can only fulfill this requirement for one author. Individual graduate programs may have more stringent requirements and they will become the standard for graduation for those students.

This requirement is designed to protect the student from graduating without a first author paper. **IT IS NOT THE STANDARD FOR SUCCESSFUL COMPLETION OF THE DEGREE.** This requirement should not be misinterpreted to mean that the student is able to defend once they have a first author publication. The decision of when a student has completed the aims for their dissertation rests with the dissertation advisory committee and will generally result in 2 or more first author publications plus additional papers as co-author. Students who graduate without all of their papers published are not guaranteed the original position of authorship.

E. Time Limit to Degree

Students should complete their degree within 5 years of matriculating into graduate school provided they have demonstrated a strong work ethic in both academics and research. Students have a maximum of 7 years to complete their PhD from entry into the biomedical first semester curriculum to defense of their dissertation and submission of the dissertation to the Electronic Thesis and Dissertation repository (ETD). Students who fail to complete the degree within this timeline will be recommended for a terminal MS in Biomedical Sciences Degree. In extraordinary circumstances, students can petition for an extension of the time to degree. This petition must be approved by both the graduate program director and the Assistant Vice President for Graduate Education. Only one extension will be allowed and will not exceed 1 year.

These time limits include students who have switched laboratories, as 7 years is still 2 years longer than the recommended 5-year timeline. Students entering their 6th year in graduate school will need to have committee meetings every 6 months in order to monitor progress. Failure to meet the committee meeting requirement may result in suspension of the student's stipend and tuition waiver until this requirement is met.

Notes:

1. This policy is in addition to the University timeline of 5 years post candidacy and in the case where the 7 year mark precedes the 5 year post candidacy deadline, the student is governed by the 7 year time limit.
2. Students who have a documented leave of absence can subtract the time during their leave of absence from the 7-year deadline.

F. Exit Interview

The exit interview is conducted with the Assistant VP for Graduate Education shortly after the successful defense of the dissertation. The interview is collegial and will allow the student to express his/her opinions about their graduate experiences. All expressed opinions are confidential. The purpose of the interview is to use constructive criticisms in a positive way to improve both the graduate program and the overriding support of graduate programs by the HSC and WVU. The student will be sent a form prior to the interview to fill out. In this form, the student will be asked for contact information for both themselves and 2 people who do not live with them but that would be able to find them should we lose contact. This is part of our effort to track our alumni. Tracking is necessary not only for continued program improvement, but to meet both University and Federal standards for evaluating the long-term success of our training strategies.

G. Investiture/Commencement

Students who complete all requirements in summer session or fall semester can choose to either attend a WVU-wide investiture/commencement ceremony in December or the school specific ceremony held in May. At commencement, the student receives the hood signifying the degree of Doctor of Philosophy and recites the Ethical Affirmation for Scientists. This affirmation was originated at WVU and was published in the journal, *Science,* in 2003. The PhD hood can be placed on the student by their faculty advisor, their programs director, or other faculty/family member who also has a PhD. Faculty or family with professional degrees cannot hood PhD candidates. Consult the WVU catalog for additional information on hooding and attendance of commencement. Note, the number of ceremonies and format are subject to change.

H. Certification of Completion of the Degree

The student does not officially have the degree until after the commencement ceremony in which it would have been conferred. Designation that the degree is completed does not appear on the student's transcript until several weeks after graduation. Most students begin their next position within a few weeks on defending their dissertation. Many companies/institutions request proof that the degree requirements are completed and students can obtain a letter certifying this prior to commencement. These letters can only come from the Registrar. Students should submit a request for this letter to the Assistant Vice President for Graduate Education, who will then send this request to the Registrar. In your request, be sure to provide complete contact details for the person who should receive this letter. Most letters are sent within 48 hours of the request.

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Syllabi:

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BMS 707 Experiential Learning for the Biomedical Sciences Syllabus 39

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Student review policy 49

Transfer of biomedical PhD students into MD/PhD program 55

Mentor conflicts and changing mentors 57

Helpful Guides:

Guidelines for writing a dissertation 59

How to set up a Dissertation (PhD) advisory committee 62

WVU Health Sciences Center

Acknowledgement Form for entering graduate students

As an entering graduate student, I agree to review the policies and procedures published in the student handbook provided to me at orientation and available on-line as well as the additional information in the on-line Student Conduct Code listed below. I understand that I may seek discussion and clarification of these documents from the Assistant VP for Graduate Education at the Health Sciences Center. Please be sure to review these specific policies and sign each statement below.

Name: (printed or typed)_____Date:_____

The Student Handbook for Graduate Students in the Biomedical Sciences Graduate Programs at the WVU Health Sciences Center.

I have read and understand the Handbook of the Biomedical Graduate Programs at the WVU Health Sciences Center; both the information within this handbook and on-line catalogs and policies to which this handbook refers. These include but are not limited to:

- WVU Graduate Catalog (http://catalog.wvu.edu/graduate/), and
- Campus Student Code (http://campuslife.wvu.edu/office_of_student_conduct).

I agree to abide by the requirements outlined in this document as well as the University requirements governing these degrees.

Signature:_____

Academic and Professional Standards

I pledge to adhere to the Academic and Professional standards for graduate students (section VIII of this Handbook) and to maintain the highest standard of scientific integrity in all that I do.

Signature:_____

Federal, State, and University Requirements for Laboratory Conduct

I agree to adhere to all Federal, State, and University policies and requirements for the conduct of work in the laboratory. I will remain up-to-date on all certifications for both laboratory conduct and the responsible conduct of research.

Signature:_____

Syllabus

Biomedical Lab Experience – BMS 702

Offered Fall and Spring semesters
Credit hours - 2

Coordinator

Dr. Lisa M. Salati
G111 Erma Byrd
304-293-7759
lsalati@hsc.wvu.edu

Course Description:

Five week lab rotations within the laboratories of faculty affiliated with the biomedical graduate programs. They are designed for first year graduate students to gain laboratory experience and to pick a laboratory for their dissertation research.

Learning outcomes:

At the end of the course, students will be able to:

- Select a faculty mentor to guide their dissertation research
- Compare the research area of other laboratories in the Health Sciences Center so that you can interact scientifically with the members of that laboratory
- Identify research expertise of other laboratories in the Health Sciences Center so that the student can interact scientifically with the members of that laboratory.
- To select faculty members for the student's dissertation committee.
- Describe and apply new techniques for biomedical research to your scientific research.

Activities during the rotation:

The bulk of the time in the rotation is conducting experiments under the supervision of the laboratory principal investigator or his or her designee. You are responsible for keeping a laboratory notebook documenting your work and in compliance with federal standards. You will also attend laboratory meetings and read research articles and methodological papers relevant to that laboratory. You should also attend seminars and journal clubs that are attended by the members of that laboratory unless they are scheduled during the time of your other courses.

Research Profiles of Available Mentors:

Before Boot Camp, you will receive a booklet of one-page research profiles of the available faculty. The Office of Research and Graduate Education approves this list; occasionally faculty

will be added/deleted to/from the list over the course of the summer/fall due to changes in available funds. Please be prepared to identify at least three faculty with whom you would like to conduct a short lab experience and try and meet with them during Boot Camp.

How to choose your rotations:

During Boot Camp, you will have the opportunity to meet with the faculty who are approved to recruit a graduate student that year. This will be a brief introduction to them and their research. Use this time to identify faculty that you would like to meet with after boot camp and discuss their research and potential rotation projects in more detail. During the Monday and Tuesday prior to the start of classes, meet with your short list of faculty for the first rotation, to review their research in more detail. Note, that you and the faculty member do **not** make the decision of assigning you to a rotation in their laboratory. This is done by the Assistant Vice President for Graduate education. Faculty may indicate that they are unavailable for one of the rotations.

On the Wednesday after Boot Camp, you will submit to Dr. Salati the names of three faculty members (rank order) with whom you would like to rotate during the first rotation. While we strive to give you your first choice, we reserve the option to match you with your second or third choice based on competition with other first-year students for the same faculty mentor and research interests.

During the weeks after Boot Camp, each graduate program will hold separate "meet and greet" style sessions so that you can meet available mentors and learn about their research in more details, and you can learn about the different graduate programs.

Half-way through the first and the second rotations, you will be asked to once again submit three names for the second and third rotations, respectively. Once again meet with faculty to discuss research in more detail, if you have not already done so.

> ***NOTE:*** Typically, only one student will rotate in any given laboratory during each rotation. Some faculty may host two students at a time, but do not assume that this will be possible.
>
> ***NOTE:*** Due to time constraints with obtaining security clearance for rotations at NIOSH, please indicate your desire to do a rotation at NIOSH before or shortly after arriving at WVU. You must submit a security clearance form before conducting a rotation or dissertation research at NIOSH. It takes time to obtain a security clearance at NIOSH. Please be aware that a dozen or more people at NIOSH and CDC are involved in the submission and approval processes. Therefore, NIOSH staff request that only those students who are really interested in the research faculty at NIOSH submit this form. If you are seriously considering doing research at NIOSH, you will need to talk to NIOSH faculty for the proper form.

Policy on number of rotations:

All students should plan on doing 3 rotations regardless of how soon they are happy with a laboratory experience or their intent to work with a specific faculty member. This process is important in viewing different mentoring styles, meeting more faculty and students, and learning more about research at the HSC. In rare circumstances such as but not limited to, a long-term technician entering graduate school, rotations may be abbreviated or eliminated or the rotations may be with faculty who are not recruiting a student that year but may either collaborate with the lab or be a potential member of the student's dissertation advisory committee. The decision and the terms of that decision to permit a student to forgo or abbreviate rotations must be approved in writing by the Assistant Vice President for Graduate Education and placed in the students file.

How to select a dissertation mentor:

Please see your student handbook for more details on this. In brief, near the conclusion of each rotation, if you would like to consider them for your dissertation research, speak with the faculty member about potential topics for a dissertation. This discussion is only for information purposes and is not a promise that you can join and/or do that project. Do NOT ask them if you can join their lab, you have more rotations to do. It is possible that events can change over the course of the semester and/or they may feel you are not a good fit for the lab. They are NOT to make promises to you either; they could prefer another student rotating later in the semester. To be listed as a choice, you must have done a rotation in the faculty member's laboratory or demonstrated significant interaction during another rotation.

Schedule:

Choices for first rotation are due to Dr. Salati by 5 PM Wednesday, August 21, 2019.
Rotation 1: Monday, August 26 – Friday, September 27, 2019
Choices for second rotation are due to Dr. Salati by 8AM Monday, September 23, 2019
Rotation 2: Monday, September 30 – Friday, November 1, 2019
Choices for third rotation are due to Dr. Salati by 8AM Monday, October 28, 2019
Rotation 3: Monday, November 5 – Thursday, December 12, 2019
Choices for dissertation laboratory are due to Dr. Salati by 5PM Wednesday, December 18, 2019 (this may be subject to change)

Rotation 2 includes the 2 days of Fall break, October 10 and 11. These days are not observed in a graduate student's schedule. Thus, you should plan to be in your laboratory rotation on those days.
Rotation 3 includes the week of Thanksgiving. Do not assume that it will be vacation for you. While classes are not in session this week, the University is open on Monday and Tuesday and many laboratories are in full operation. Discuss with the faculty member, if they would like you to work those days.

If you have not matched with a dissertation mentor by December/January of Year 1, you will conduct rotations during the spring semester until a match is finalized. Please discuss with your rotation host about conducting research during University spring break.

Attendance policy:

Before the start of each lab experience, you should meet with the faculty member and set up a daily work schedule keeping in mind the expectation listed below. At this time, you may also receive additional materials to read in preparation for your experiments. Remember, faculty members have other obligations - do not wait until the last minute to meet with them. If you cannot be in the laboratory at the scheduled time you must contact the faculty member and the primary supervisor, if applicable. Absences should be limited to illness or another significant event. Inform your rotation mentor of exams that will alter your schedule; however, you are not to forgo laboratory work in the days before the exam in order to prepare for the exam. Expectations of the faculty are that you will use evenings and weekends for studying and that you will remain up-to-date in your coursework to prevent the need to cram before exams.

Expectations:

During the laboratory rotation, you will be expected to

- keep a regular work schedule in the laboratory,
- spend 12 hours per week actively engaged in experimental work or laboratory meetings, total time may be greater due to inactive periods during incubations, running gels, etc., such times can be used to study and read the scientific literature.
- read the literature pertinent to that laboratory.

By the end of the rotation, you should

- know what the major questions are for that laboratory,
- explain how your work fits into the goals of the laboratory,
- describe the assays you did including knowing the purpose for all steps and reagents,
- appropriately interpret your data, and
- know what the major pitfalls are in arriving at these interpretations.

IMPORTANT: You are to leave your laboratory notebook with the laboratory at the end of the short lab experience. The laboratory notebook(s) is the property of the laboratory. It should not leave the laboratory at any time. With permission of the laboratory mentor, you may make copies of the notebook for your personal use. Paper and notebooks for this purpose will be provided to you by each of the laboratories. The laboratory notebook should document your activities in sufficient detail so that your experiments can be repeated without your consultation.

Grading

Laboratory experiences are graded A, B, or C and include a narrative evaluation of your strengths and weaknesses by the rotation mentor.

The criteria for assigning a letter grade include keeping a regular work schedule as agreed upon at the start of the rotation, enthusiasm for research, understanding the research questions addressed by the laboratory, excellent work-ethic, reading the literature relevant to the laboratory research, conducting experiments in an appropriate and timely manner, analyzing the data, maintaining records in your laboratory notebook of the experimental procedures and outcomes, summarizing and discussing results in the form of figures, tables, and text, and interacting well with others in the laboratory.

If you fulfill these criteria, you deserve an A. If you satisfy most of these criteria, you deserve a B, and if you do not perform up to these expected standards, you will receive a C. A grade of B or C is probably an indication that the faculty mentor is not interested in accepting you into the laboratory. A grade of C in graduate studies is considered failing, in practical terms. A grade of F is reserved for students with excessive absenteeism and/or flagrant violations of laboratory policy. The attached rubric is used by the rotation faculty in assigning a grade for that 5-week period. The 3 grades will be averaged for the course grade.

Evaluation Form - Research Rotation

Student name	

Directions: Place a check mark next to the box that best describes the student's performance. The first box represents A level work, the second box - C and the third box - F. Circle areas in the box that need improvement to indicate performance blow an A or C, and provide written comments in the box below.

Research Skill

	Adept at following instructions, few mistakes, and mistakes are not repeated. Has excellent research skills. Has good common sense.

	Follows instructions but needs to ask frequent questions to get the protocol correct. Makes mistakes and the mistakes are sometimes repeated.

	Requires considerable follow-up to ensure correct procedures are followed. Mistakes are common and often repeated. Needs to be guided at every step.

Comments:

Citizenship

	Informs fellow research members when a research item needs to be reordered or replenished. Offers to replenish the item. Demonstrates tidiness. Does not interfere with the work of others. Research items are appropriately labeled and stored. Works well with others.

	Does not always inform fellow research members if a research item needs to be restored. Work area is left in reasonable shape. Some research items are labeled but needs prompting. Generally gets along with fellow research members but can be disruptive with chatting.

	Distracting in the research setting, with chatter or questions. Does not get along well with others. Is messy and research items are not properly identified.

Comments:

Research Notebook (or Alternative Record Keeping)

	Notebook is complete and neat. Anyone could reproduce experiments based on the record. Purpose for experiment and protocols are easy to discern. Data are neatly compiled, and results are summarized.

	Notebook is neat but lacks dates and page numbers. Protocols are summarized, but recipes or other details are missing. Data are listed, but conclusions are not summarized. Objectives for experiments are not stated.

	Notebook does not provide a resource for reproducing experiments. Protocols are lacking or incomplete. Data cannot be interpreted due to lack of labels. Conclusions are not provided. Notebook is messy and/or illegible.

Comments:

Intellectual Ability

	Student readily grasps the hypothesis to be tested and the rationale for the experimental design. Time between experiments is spent reading the relevant literature or researching the protocol. Student is able to coherently explain what they are doing.

	Student can explain what they are doing, but the hypothesis and rationale do not appear to be clear. Does some reading on own, but this area needs improvement.

	Student seems to be lost as to why they are performing the experiments and what the goal is for the laboratory. Spends little or no time reading about the laboratory topic or experimental approach.

Comments:

Work Ethic

	Student works the agreed upon schedule. Student informs the PI of absences. Student makes efficient use of all time. Student demonstrates enthusiasm for research.

	Student is generally present during agreed upon hours but absences are not always communicated. The student will leave even if the experiment is not complete. Student is seen surfing the internet and/or is late arriving. Student shows interest in research but lacks commitment.

	Student is frequently not present during agreed upon hours. Student does not communicate absences. Student wastes time and is frequently seen doing things other than research work. Student lacks interest in research.

Final Grade

	Grade	+/-
	A	
	B	
	C	
	D	
	F	

Additional Comments - please identify strengths and areas that need improvement.

Faculty Name	

Experiential Learning for Biomedical Trainees – BMS 707

<u>NOTE:</u> Application materials and ideas for experiences can be found on SOLE -> Health Sciences Center Graduate Programs -> Biomedical graduate programs -> Experiential learning

Offered Fall and Spring semesters and Summer session
Credit hours – 1 – 2; course may be repeated up to 3 times
Format of Instruction: practicum

Coordinator

Dr. Lisa M. Salati
G111 Erma Byrd
304-293-7759
lsalati@hsc.wvu.edu

<u>Catalog Description:</u>
Graduate students in the biomedical sciences gain experiences and/or skills outside of their dissertation laboratory that lead to more informed decisions regarding their research questions or their career goals. These experiences are organized by the student and then proposed and approved/disapproved by a faculty committee prior to beginning the experience.

<u>Course Description:</u>
Experiential learning is an opportunity for graduate students in the biomedical sciences to gain experiences and/or skills outside of their dissertation laboratory that lead to more informed decisions regarding their research questions or their career goals. These experiences are organized by the student and then proposed and approved/disapproved by a faculty committee prior to beginning the experience. Students are to have at least 2 credits of experiential learning on their plan of study. These credits can be taken as one experience (2 credits in a semester) or two shorter (1 credit) experiences taken in different semesters.

Learning outcomes:

Because this course encompasses a myriad of experiences that have different learning goals, all outcomes will not be applicable to all students. At the end of the course, the student will be able:

1. Apply the results of their research to health concerns of patient or community populations
2. Identify a new research direction to help a patient or community populations
3. Identify a new career goal or confirm an existing career goal and identify additional skills needed to achieve that goal
4. Identify one or more transferrable skills needed for their career goal
5. Apply new techniques or approaches to test hypotheses that would not have been part of their dissertation research either performed by the student or a direct collaborator

Prerequisites:
BMS 700 Scientific Integrity-2 semesters with a grade of S; consent of the instructor

Consent:
Consent requires that the following conditions be met - 12 h of graduate course work with GPA of 3.0 or greater; 4 h or more of research credit (797) with a grade of S and no unsatisfactory written comments; completed selection of a dissertation advisor and graduate program; documentation of annual review of individual development plan (IDP) with the dissertation advisor

Approval of an experiential learning topic

All plans for experiential learning must be vetted by a faculty committee prior to registering for the course. The student needs to prepare an application using the template attached to this syllabus.

Schedule:

The student should use the guideline of 45 h of active work = 1 credit hour. Active work means time spent in the experience and should not include meals, travel, or commuting time. The activity should occur between the first and last days of the semester or summer session in which the student is registered. The written report and the evaluation of the experience are due within one week after concluding the experience; the oral report of the experience should also be completed prior to the end of the semester/summer session in which the experience occurs.

Attendance policy:

In all things, the upmost in professional behavior is expected. The student is expected to participate fully in all activities as part of the experience. They are to arrive at the appointed location at least 10 min ahead of schedule. They should determine with the lead person at that facility, the proper times for meals and for the end time of the day. They should not leave for personal errands or allow personal commitments to overlap with the experience. If the student is in a location where sightseeing is an option, this should be done outside the time of the experience and at the student's own expense. If a student is sick or has an emergency or there is inclement weather that prevents attendance of more that 10% of the activities, they should withdraw or request an incomplete if it is possible to reschedule the experience.

Assignment:

Within one week of the conclusion of the experience, the student must provide a written report, not to exceed one page regarding the key things they learned during the experience particularly as they relate to the learning outcomes listed above and they are to indicate how

they will share this information with their peers. They must provide a written evaluation of the experience.

Textbook:
None; but, the student may be required to read additional papers from the scientific literature. Depending on the experience, a facility may request that the student purchase instructional materials, listen to webinars, or attend special seminars.

Grading:

This course uses the P/F grading scale. Grading is based on attendance, evaluation by the host facility (if applicable), and the written and oral reports. To receive a pass the attendance policy must be followed. If the experiential learning involves attending another facility, company, or laboratory, the student must receive a satisfactory written evaluation by the host facility using the attached evaluation. A satisfactory evaluation requires receiving a "yes" to the first 3 questions and no comments indicating problems during the experience. The written report by the student (assignment) must be turned in on time, written in correct English, well organized, and identify at least 2 learning outcomes that resulted from the experience. The student must have reported the experience to his/her peers at a seminar, a research forum, or during a journal club.

Inclusivity Statement

The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Accessibility Services (293-6700). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see http://diversity.wvu.edu.

Position Paper on Graduate Fellowships in the Biomedical and Clinical and Translational Science PhD Programs

Office of Research and Graduate Education, April 2019
Effective for fellowships and scholarships received during FY2019

The purpose of this policy is to clarify the remuneration of students who receive a fellowship, scholarship or other external funds. Graduate students at WVU receive these sources of funding from the University, foundations, and government agencies such as NIH. Despite the source of funding for the stipend, all graduate students will receive a stipend of $28,000, remission of tuition – both University and College, and health insurance, if requested. Different sources of student support provide different opportunities and occasionally challenges.

Policy for incoming students receiving fellowships:

WVU fellowships currently available to new students at the Health Sciences Center are the Ruby Distinguished Doctoral Fellowship, the Arlen G. and Louise Stone Swiger Fellowship, and the University Provost. The financial package provided by each fellowship is listed in the table below.

	Ruby	**Swiger**	**Provost**	**STEM**
Stipend	$34,000	$25,000	$17,000	$30,000
Tuition waiver	Yes	Yes	Yes	Yes
Student fees	Yes	Yes	No	No
Health Insurance	Yes	Yes	Yes	Yes
Duration	3	3	3	1+
Eligibility	Citizen	Citizen or Permanent Resident	Citizen or Permanent Resident	Citizen or Permanent Resident
Other	$2000 travel		Paid as a scholarship, in monthly installments August through April, pre tax	

The Assistant Vice President for Graduate Education with recommendations from the admissions committee nominates students for these fellowships from the applicant pool accepted into the Biomedical program. Nominations are due in early February and thus occur before the applicant has accepted our offer. The strongest applicants are nominated; the applicant quality is not higher for the Ruby than for the Provost. Because of this, all students receiving one of these fellowships will be supplemented to an equivalent stipend and fee reimbursement. For instance, if one student receives a Swiger and one a STEM, both will receive $30,000 combined stipend and fees. The differences in coverage of student fees and the travel budget will not be compensated. **At the end of the fellowship period, the student will return to the standard stipend (currently $28,000), remission of tuition – both University and College, and health insurance, if requested.**

Policy for current students receiving fellowships:

Students currently in graduate programs may receive fellowships or scholarships from multiple sources:

Predoctoral fellowships and training grants:

Extramural examples:

- NIH F Awards
- Foundation predoctoral fellowships such as American Heart, Susan G. Komen

Intramural examples:

- T32 training grants
- Outstanding Merit Fellowship for Continuing Doctoral Students (WVU Provost)

Stipend: The student stipend will continue to receive the standard stipend (currently $28,000) or the stipend stipulated by the granting agency, whichever is more. If the funding source is less than this amount, the difference will be supplemented by the student's mentor if funds are available or by the Office of Research and Graduate Education.

> ***NOTE***: For students who transition from an internal fellowship to an external fellowship that is less than the internal fellowship stipend, they will be supplemented to the amount of their current stipend for the remainder of that fellowship period and then will transition to standard stipend level (currently $28,000). For example, if a student is on the Ruby fellowship ($34,000) and receives an F31 with one year remaining on the Ruby, they will be supplemented to $34,000 for one year and then will be receive the standard stipend amount.

Tuition: Students will continue to have full waiver of University tuition and scholarship of college tuition.

Health Insurance: Students will continue to be covered by health insurance either by the funding source if provided, by the advisor's funds or by the Office of Research and Graduate Education.

Other: Students are entitled to other benefits provided by the funding source. These may include travel to scientific conferences, research supplies, or publication costs.

Incentive for obtaining extramural fellowships: Obtaining competitive external fellowships provide benefits to both the recipient and the laboratory. First and foremost, they enhance the competitiveness of the recipient's CV. For students who will obtain postdoctoral training, a predoctoral fellowships is direct evidence that the student has the knowledge to apply for a postdoctoral fellowship. For the MD/PhD student, it will enhance competitiveness for applying for residency programs. In addition, some fellowships provide money for travel. The fellowship provides a significant cost saving for the laboratory. These savings can allow additional travel to conferences, the purchase of labor and time saving kits or the ability to use analyses that might have been too expensive otherwise. Finally, any student awarded an **extramural** fellowship will be sponsored by the Office of Research and Graduate Education to attend one conference per year (USA only) for the duration of the fellowship.

Scholarships and other student supplemental funding:

In general, scholarships do not provide for the full stipend. Students can receive these at any time in their studies. Students are first and foremost bound by the rules of the scholarship in deciding how to use this money.

Examples include:

- WVU Foundation Distinguished Doctoral Scholarship - $5000 – to be used to defray educational and research costs including travel. It appears as a one-time sum in the student's account.
- American Foundation for Pharmaceutical Education - $10,000 – award use is to follow University guidelines and can be used for research supplies, books, travel to scientific meetings, or a portion of the stipend, offsetting what would have been paid from the laboratory funds
- Jennifer Gossling Scholarship for a PhD student in Microbiology – used for research supplies and travel. This money is distributed through the Department of Microbiology, Immunology and Cell Biology

Stipend: Scholarships and awards within this category cannot be used to supplement stipends above the standard stipend amount (currently $28,000). When the money can be used to support the stipend as well as other expenses, the student will work with the Office of Research and Graduate Education and the advisor to determine the best way to use the funds.

Tuition: Students will continue to have full waiver of University tuition and scholarship of college tuition.

Health Insurance: Students will continue to be covered by health insurance either by the funding source if provided, by the advisor's funds or by the Office of Research and Graduate Education.

Other: Students are entitled to other benefits provided by the funding source. These may include travel to scientific conferences, research supplies, or publication costs.

Receipt of funds and reporting responsibility:

In cases where receipt of funds is directly deposited into the student account, the onus is on the student to use these funds within the guidelines of the Foundation providing the funds and this position statement. Failure to follow these guidelines would be viewed as a violation of professional conduct.

Students are responsible for reporting as needed to funding agencies. Students should consult with the Office of Research and Graduate Education if they have any questions or concerns about how to report the use of scholarships or other funds.

When any of these funds are distributed pre-tax directly to student either as a check or into their student account, the student is responsible for any income tax they may owe on this amount. The Office of Research and Graduate Education does not advise on tax matters and the student is advised to seek advice from professionals on this.

WestVirginiaUniversity.
ROBERT C. BYRD
HEALTH SCIENCES CENTER

Long-Term Leave of Absence Policy
Graduate Programs in the Health Science Center

1. INTRODUCTION AND DEFINITION

Under certain circumstances, graduate students may request or have imposed a long-term leave of absence (LOA) during which they are recessed without stipend from the program for a specified duration. There are several categories under which a student may petition for a leave of absence: medical, personal, and academic. In addition, an administrative leave of absence may be enforced due to serious academic or professional deficiencies.

A long term LOA is a period greater than 1 calendar month duration during which time the student is not engaged in significant productive activity toward the degree. The LOA may last up to 1 year. WVU policy is that students can only be inactive in their program for 1 year after which time they would need to reapply for admission.

2. POLICY

The request for the long-term LOA should be presented in writing to the Graduate Program Director and reviewed by the Program's faculty or subcommittee who will then recommend to the Associate Dean for Research and Graduate Programs (Dentistry, Nursing, Pharmacy and Public Health) or the Assistant Vice President for Graduate Education (Medicine) the terms under which the student may return to the program. Following the agreed upon time of absence, a student in need of more time in recess will be officially withdrawn from the program, unless the above administrative groups grant an extension because of special circumstances. Once withdrawn from the program, individuals must reapply for and gain admission to resume their studies. If a student fails to return from the LOA on the specified time and has not made any request for an extension, they shall be immediately withdrawn from the program. Reentry into the program will require a new application for admission.

3. TYPES OF LEAVE AND PROCEDURES

A. LEAVES OF ABSENCE WITHOUT STIPEND

1) Student-initiated leaves:

Medical LOA: This type of LOA is reserved for acute medical problems of a physical or mental health nature affecting the student or a first-degree relative requiring intense medical care. In order to return to the program, the student will present a letter of release from the treating physician clearly stating that they are fit to return to the rigors of a graduate program.

Personal LOA: This type of LOA is used for reasons of a personal nature affecting the student's ability to be successful in the program. These may include, but are not limited to requests regarding family-related issues unrelated to health, visa issues, or a reconsideration of career direction.

Academic LOA: This type of LOA is reserved for students who desire a recess from the program while currently unsatisfactory in a course prior to the issue of a final evaluation in that course. Student's leaving the program for this reason will have specific requirements for their return, which will generally involve successful remediation of their knowledge base. Return to the program will involve evaluation of the remediation as well as the entire academic record. Students who fail to successfully meet the criteria stipulated in the letter granting the leave may not be permitted to return. Should a student be permitted to return to the program, the Graduate Program will recommend if the student returns on academic probation or in good academic and professional standing. Students, who are recommended not to return to the program, must reapply and gain admission in order to resume.

Procedure: Request for a LOA must be initiated in writing. Student-initiated LOA requests use the Long-term LOA form. The student and the student's advisor (if applicable) should sign the form and present it to the Graduate Program Director. The request will be reviewed by the Program Director, Program Faculty and/or subcommittee and appropriate Dean. Upon acceptance of the request the student will be notified in writing and the letter will contain any applicable requirements for return to the program. Upon return to the program, the student presents any required documentation to the Graduate Director. Once the return is accepted, the Graduate Director signs the LOA form indicating that the leave is over. If a student chooses not to return from the LOA, they should submit a letter to the Graduate Director indicating this fact.

2) Administrative-initiated leave:

Administrative LOA: This type of LOA is imposed by the Graduate Director and/or appropriate Dean for that Graduate Program due to academic or professional deficiencies, such as failure to progress in research, inattention to the academic or professional standards of a graduate student, or unexplained absence from the program of greater than 1 week. This type of LOA will be part of the student's permanent record.

Academic LOA: This is the same as the student-initiated leave and is due to a deficiency in academic standing prior to the final evaluation in a course(s).

Procedure: The administrator (Graduate Director, advisor, Dean) initiates this request in writing. The LOA should indicate the reason for the leave, the length of the leave, and any requirements for return. LOA requests should be approved by the Graduate Director and appropriate Dean prior to presentation to the student. The student should sign the letter indicating that they understand the terms. Upon return to the program, the student presents any required documentation to the Graduate Director. Once the return is accepted, the Graduate Director signs the LOA form indicating that the leave is over. If a

student chooses not to return from the LOA, they should submit a letter to the Graduate Director indicating this fact.

B. LEAVES OF ABSENCE WITH STIPEND

Parental LOA: This is a LOA due to the birth or adoption of a child. Stipend should remain intact for the duration of the leave term as specified below.

- 6 Weeks for an individual
- 8 weeks total per family if both parents are enrolled in HSC graduate programs

Procedure: A specific form is not necessary for parental leaves of 6 or 8 weeks duration but the times frame should be communicated between the student and the mentor. If the mother has complications that require more time away than 6 weeks either before or after the delivery, a letter from the student's doctor is required documenting the amount of leave necessary. In general, a 2-week extension of this time will be granted. Longer periods than this will be handled on a case-by-case basis and depend upon the ability of the student to achieve significant progress toward the degree.

Other LOA: In some circumstances, the student may not be in residence in the program for greater than one month but may be able to achieve significant progress toward the degree. During this time, the student may remain on stipend.

Procedure: Such agreements should be documented in writing in letter format and include:

1. Reason for leave
2. Duration and timing of leave
3. Planned activities during leave
4. Planned method of communication during the leave

The letter documenting these conditions must be signed by the Graduate Director and placed in the student's file.

NOTES:

Extension of time in the program or to meet program-specific requirements: If the student is unable to complete the degree within the University time limit for attaining the degree, they may petition for an extension equal to the time of the LOA. Petitions must be presented to the Graduate Director in writing 6 months prior to the end of this limit and the graduate director should forward ones for consideration to the Assistant Vice President for Graduate Education. Petitions for extensions of other program specific activities such as candidacy exams, seminars, etc. should also be handled in writing and occur prior to the semester in which the activity is to take place.

Exceptions to the above: Programs that are accredited may have specific residency requirements and the rules of the accrediting agency supersede these institutional guidelines.

WestVirginiaUniversity.
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HEALTH SCIENCES CENTER

REQUEST FOR A LONG-TERM LEAVE OF ABSENCE

Date of request:

Name:

Graduate Program:

Type of leave:

Personal
Medical
Academic
Administrative

Person initiating request:

Date of the start of leave:

Date of anticipated return:

Reason for request:

Signature of student:_____

Signature of advisor:_____

Phone: 304-293-7116
Fax: 304-293-9257

Health Sciences Graduate Programs
2271 Health Sciences South
PO Box 9024
Morgantown, WV 26506-9024

Student Review Policy for Graduate Programs at the Health Sciences Center in the Biomedical, Clinical and Translational, and Health Sciences

This policy only applies to students enrolled in the following Graduate Programs:

	Graduate Program
Undifferentiated	1st Year Biomedical Sciences
Masters	Health Sciences Biomedical Sciences Clinical and Translational Science
Doctoral	Biochemistry and Molecular Biology Cancer Cell Biology Cellular and Integrative Physiology Exercise Physiology Immunology & Microbial Pathogenesis Neuroscience Pharmaceutical & Pharmacological Sciences Pathway[1] Clinical and Translational Science
Combined	MD/PhD Scholars Training Program[2]

Approved by the graduate program directors January 5, 2015
Amended July 2017 (new appeals policy) and June 2018 (interface between graduate programs and GP-CAPS)

Each graduate program is responsible for monitoring the progress of its own students, identifying deficiencies, and recommending paths for remediation. Students receive evaluations on a semester basis through coursework and research grades, and at least annually via program review and for PhD students, meetings of his/her dissertation advisory committee. Whereas individual programs may have unique expectations of their students, many requirements are common to all programs. The following review process is designed to encourage high standards of scholarship, integrity, professionalism, ensure due process, and provide opportunities for remediation. This process also recognizes and affirms the unique aspects of discipline-specific research training that is embraced by individual graduate programs.

[1]PPS degree is awarded by the WVU School of Pharmacy
[2]only applies during the PhD phase of the MD/PhD training program

Definitions

Candidacy exam: This is also called the defense of the dissertation proposal. This exam involves the preparation of a written document outlining the plans for the student's dissertation research. The document is written in the style of a fellowship application. The student presents a seminar to the faculty

describing his/her plans and then meets separately with his/her dissertation advisory committee to defend his/her ideas. The student can retake this exam one time without consequence (probation, demotion to MS or dismissal). For PhD students, the exam must be completed prior to the first day of class of the Fall Semester of their fourth year in graduate school; individual programs may impose an earlier deadline and this earlier deadline is binding. For MD/PhD students, the exam must be completed by the end of the fall semester of the second year after beginning the research phase of their curriculum.

Dissertation mentor: This is the faculty member that is the advisor for the student's dissertation research. This individual must be a full member of the Graduate faculty and is either the principal investigator of the laboratory in which the research is conducted or is a collaborator of the scientist in whose laboratory the research is conducted.

Dissertation advisory committee: This is a group of at least 5 graduate faculty that oversee the progress of the student during his/her dissertation research. At least 3 members must be faculty from the student's graduate program. The student, in consultation with his/her dissertation mentor, selects the committee members. The committee meets at least annually. During these meetings, the student presents his/her research progress and plans for completion of degree requirements and post graduation plans. The committee provides feedback on this and reviews the student's progress on the Plan of Study and his/her academic achievement. The results of this meeting are recorded on an evaluation form that becomes part of the student's file.

Graduate Programs-Committee on Academic and Professional Standards (GP-CAPS): is composed of biomedical sciences faculty from the HSC who hold regular membership on the graduate faculty and includes representatives from both the Schools of Medicine and Pharmacy. The Vice-President for Health Sciences Research and Graduate Education appoints the faculty to serve on GP-CAPS. The primary role of this committee is to ensure that student performance concerns are managed equitably and consistently across the graduate programs served by this policy.

Graduate program director: this is the faculty member responsible for coordinating the activities of the graduate program. The biomedical graduate programs have interdepartmental faculty membership; therefore, the Assistant VP for Graduate Education provides administrative oversight of all the graduate programs, rather than a department chair.

Student's file: The student's file located on SOLE contains his/her application, transcripts, graduate forms, correspondence, and other relevant communications or notifications. The duplicate copy resides in the Office of Research and Graduate Education. Students are instructed to provide copies of all forms required for graduation.

Undifferentiated first year students: The 7 biomedical PhD programs recruit students via an undifferentiated or umbrella admissions process. Applicants are screened and admitted by an admission's committee made up of representatives of all 7 programs. The students take a common first semester curriculum and do research rotations to choose a dissertation mentor. Once a dissertation mentor is selected, the student requests admission to one of the 7 biomedical graduate programs and from that point the student is governed by the handbook for the specific graduate program. Choice of mentor and graduate program occurs by the end of the fall semester or during the spring semester.

Probation, suspension and dismissal: Definitions of these terms can be found in the University Graduate Catalog. The exception to this is that the GPA requirement for the graduate programs governed by this policy is 3.0.

http://catalog.wvu.edu/graduate/enrollmentandregistration/#probationsuspensiontext

Review of Graduate Student Performance

1. Documentation of Student Performance

- Student performance in graduate education is rated using the following measures:
  - Grades in classes.
  - Maintenance of a GPA of 3.0 or high
  - Performance on the Qualifying examination and the Candidacy examination
  - Performance in the conduct of research as evaluated by the dissertation/thesis mentor and the dissertation/thesis advisory committee
  - Performance in other curricular activities as evaluated by a faculty member, the mentor, or faculty/University committee overseeing that activity
  - Congruence of actions and behaviors both on and off campus to the WVU Student Code of Conduct (http://campuslife.wvu.edu/r/download/180235) or of professionalism (see relevant handbook for graduate program)

- Student performance in research is evaluated at the end of each semester and summer session and reflected in the grade in research provided by his/her mentor. This grade includes both the letter grade and written comments provided by the mentor and the evaluation of the student's dissertation advisory committee meeting.

- Student's overall performance is reviewed at least once per year annually by his/her dissertation/thesis advisory committee and by his/her graduate program. Performance of students in the first year of the 7 biomedical PhD programs, the MS in Health Sciences and the MS in Biomedical Sciences is reviewed semi-annually by GP-CAPS.

- Deficiencies in student performance can result in recommendations for remediation, disciplinary action, or both.

2. Performance That May be Subject to Disciplinary Action

- Unsatisfactory performance by a graduate student includes, but is not limited to:
  - inability to maintain a GPA of 3.0, or achieve minimum grades of "B" in required courses
  - inadequate research progress, as judged by the mentor or dissertation committee and documented in the advisory committee evaluation or written comments at the time a grade for research is assigned (even if the grade is S), or a grade of "U" in research (a combination of two "U" grades in research (*xxx797*) or dissertation (*xxx798*) is grounds for dismissal)
  - failure to complete benchmarks in a timely manner (i.e., qualifying exam, proposal defense)
  - reaching the limit on time to degree (5 years post the candidacy exam for PhD students and 8 years total in the program for MS students)
  - poor attendance/participation as specified by graduate program handbooks or course syllabi at required program activities (i.e., journal clubs and seminars)
  - unapproved extended or multiple absences
  - violations of the WVU Student Code of Conduct (http://campuslife.wvu.edu/r/download/180235) or of professionalism (see relevant handbook or for Biomedical science students: http://www.hsc.wvu.edu/resoff/graduate-education/phd-programs/biomedical-sciences/1st-year-handbook/#ProfessionalStandards)

- Problem(s) must be brought to the attention of the graduate program director and documented in the student's file. Documentation can include:
  - an unsatisfactory grade on the transcript,
  - a letter from the student's dissertation mentor or another faculty member,
  - the evaluation report of the student's dissertation advisory committee meeting

3. Graduate Program Response to Unsatisfactory Student Performance

- Student notification: Within 5 calendar days of notification of the problem, the program director notifies the student in writing describing the unsatisfactory performance, measures necessary to correct the deficiency, and a timeline for correction. ***NOTE***: This and all subsequent communication with the student are sent via email and the student must sign and return a copy of the letter to document his or her understanding of the concern/s and, if applicable, acceptance of conditions for remediation.

- Ascertaining student's side of the story: The program director meets with the student to ascertain his/her viewpoint on the problem and ability to correct the deficiencies. Any mitigating circumstances are noted and a written summary of this meeting, co-signed by the student, is placed in the student's personnel files.

- Determining the need for additional courses of action: The program director discusses the student's situation with the mentor and dissertation advisory committee, if formed, to determine if any additional courses of action are necessary. The student can be present at all or part of this meeting by the request of the program director, mentor or dissertation advisory committee. The student is informed in writing (via email) of the results of this meeting and is given the opportunity to provide more information or rebut the recommendation either in writing or in person. If the problem does not involve a gross infraction of University policy as defined by the WVU Student Conduct Code or the Office of Academic Integrity, the case generally does not proceed beyond the Graduate Program level. Likewise, sanctions excluding dismissal are handled at the Graduate Program level so long as the student accepts the remediation.

- Deficiencies that are not corrected within the timeline established in the remediation letter, and cases that result in recommendations for probation, suspension or dismissal are referred to the graduate faculty of the specific graduate program or subcommittee thereof.
  - Once a student has had his/her first meeting with his/her dissertation advisory committee, recommendations to dismiss the student should originate from this committee.
  - A minimum of three members of the student's dissertation advisory committee, including the mentor, and a representative from the HSC Office of Research and Graduate Education must attend the faculty meeting to assist in determining a course of action. Student may be asked to submit a written explanation, and/or to appear before the graduate faculty subcommittee.

- Potential outcomes of the Graduate Program Level Review are:
  - a penalty may be imposed, such as receiving a grade of zero for an examination
  - the student may be placed on probation, with requirements set forth in writing for the student to remediate deficiencies and remove probationary status
  - the student may be suspended from the program with specific directions on how to be reinstated
  - a PhD student may be demoted to the Master's in Biomedical Sciences program
  - the student may be removed from the training laboratory

- the student may be dismissed from the graduate program; all program dismissals will be reviewed by GP-CAPS to determine if the student is dismissed from all programs in the Biomedical sciences or if they can transfer to another program pending approval of that program and finding a mentor that will support their continued study toward the degree.

- The program director reports all major infractions of institutional research procedures, and all recommendations for probation, suspension, or dismissal resulting from the Program Level Review, in writing, to the chairperson of the GP-CAPS. The report indicates the concern, the program faculty findings and actions/recommendations, and the student's response, if any. The student is provided a copy of this report and is given the opportunity to provide a written rebuttal of the letter and/or appear before GP-CAPS to explain his/her position.

***NOTE*:** Plagiarism and other forms of academic/research dishonesty, including but not limited to falsifying data or academic credentials, are also referred to the West Virginia University Office of Student Conduct and/or the Office of Academic Integrity (*http://oric.research.wvu.edu/academic-integrity).*

4. GP-CAPS Review

- GP-CAPS meets at the end of each semester to review the academic and professional performance of first year-undifferentiated students, MS Students in Biomedical Sciences and Health Sciences, and others brought the attention of the committee by a graduate program. Special meetings can be called to handle significant problems that occur outside of this meeting time.

- In the case of reports originating from graduate programs, GP-CAPS may request to meet with the student prior to rendering their decision. If the student is asked to appear before the GP-CAPS, s/he may be accompanied by a peer or faculty member of his/her choosing that is affiliated with the Health Sciences Center. This individual may confer with the student, but may neither speak for the student nor participate in the proceedings directly, unless requested to do so by the GP-CAPS.

    - Interface between GP-CAPS and Graduate Programs in implementing Academic and Profession Standards: Graduate students who fail to achieve a GPA of 3.0 or better in the first semester core curriculum are placed on probation or dismissed by GP-CAPS, depending on the severity of the grade point average deficit. If a student meets the terms of the probation by the end of the spring semester, GP-CAPS will remove them from probation. The program will be informed of this change in status and the letter will be placed into the student's file. If the student does not achieve the required benchmarks and/or if the terms of his/her probation extends beyond 1 semester, the student's graduate program will be requested to review the student's academic record and make a recommendation to GP-CAPS. GP-CAPS will then review this recommendation and make the final decision regarding the student's status. This can involve upholding the programmatic recommendation or making minor or major changes in the terms of the student's continuance in graduate study or dismissal from that program or the biomedical programs as a whole. As with all academic sanctions, the student has the right to appeal.

- The Assistant VP for Graduate Education and the graduate program director participate in the GP-CAPS meeting, but are *ex-officio*, non-voting members.

- GP-CAPS may:
    - concur with the graduate program's findings and actions/recommendations

- impose different actions or penalties based on the same findings or on additional findings
- determine if a student recommended for dismissal from a graduate program can switch to a different program, and establish conditions associated with this change, if any.

- For MS students and students in the first year of the biomedical PhD program, progress reviews as well as all recommendations will originate with GP-CAPS. For these students, GP-CAPS may:
  - determine that the student has met standard and advances to the next semester of the curriculum
  - impose remediation, probation, suspension, or dismissal based on their findings

- The GP-CAPS chairperson reports the Committee's findings and decisions, in writing, to the student, the program director and in the case of recommendations for dismissal, the Vice Dean for Education and Academic Affairs (dean designee for School of Medicine) or, for students in the Pharmaceutical & Pharmacological Sciences pathway, the Dean of Pharmacy. The Vice Dean for Education and Academic Affairs (dean designee for School of Medicine) adjudicates all matters pertaining to MD/PhD students, regardless of the graduate program.

Appeals Policy

General Information

- Students may appeal any academic penalty or sanction imposed by an instructor, the institution or its constituent academic units, as prescribed in the *"Academic Rights, Penalties and Appeal Procedures"* section of the WVU Graduate Catalog.

- The school or college dean (or his/her designee) is the final level of appeal for final grade penalties or exclusion from class. The Associate Vice President for Academic Affairs at the Health Sciences Center is the final level of appeal for academic probation or suspension from a program or school. The Office of the Provost is the final level of appeal for dismissal from the program or university.

- When a penalty is imposed for academic dishonesty, the University's Academic Dishonesty procedure is followed, as prescribed under WVU Board of Governors Policy 31, concurrent with Policy 15.

Policy on transfer of students from the PhD programs in the Biomedical Sciences and the Clinical and Translational Science PhD program into an MD/PhD dual degree program

This transfer will use a "step-out" approach in which students complete 1-3 years of the PhD program, MS1 and MS2, completion of the PhD degree and then MS3 and MS4.

1. The student must have completed at least one year of the PhD program and it is recommended that student's complete as much of the PhD coursework as possible prior to the transfer so as to minimize distractions from research upon their return.
2. Student must be accepted into the MD curriculum through the standard application process and be in good academic and professional standing in the PhD.
3. Student must have written permission/support of the Assistant VP for Graduate Education, the Graduate Director of their PhD program, the Director for the MD/PhD Program, the Vice Dean for Education and Academic Affairs of the School of Medicine, and their dissertation advisor in order to "step-out" of the PhD program to start the MD degree.
4. Students will need to petition their Graduate Program regarding any examinations that they need to pass before they "step-out" of the PhD program. Students should not assume that they are automatically in the MD/PhD program and thus exempt from qualifying exams.
5. Students commence the standard first 2 years of the MD curriculum beginning with the orientation week, at which time they relinquish their stipend, tuition support (waiver and scholarship), and health insurance until acceptance into the combined MD/PhD program.
6. During the summer between MS1 and MS2, students will return to the dissertation laboratory as part of the INTRO program for MS1 students and receive the summer stipend provided by that program.
7. Upon successful completion of all MS1 and MS2 course work and passing the USMLE Step 1 exam, the student needs to formally petition the School of Medicine Committee on Academic and Professional Standards and the Director of the MD/PhD program to reenter the PhD program as an MD/PhD student.
8. Upon successful petitions to reenter the PhD program, the student is formally considered to be an MD/PhD dual degree scholar, and will receive the standard financial package of the MD/PhD program: stipend, tuition waivers, and health insurance. The dissertation advisor should note that these students will need to be immediately provided a stipend out of laboratory funds as they will not be eligible for a year of stipend support from the Office of Research and Graduate Education; this support was provided as part of the first 2 years of the PhD program.
9. Students in this pathway will be expected to complete all program requirements specified for MD/PhD students in their PhD program with the exception that the deadline to pass the candidacy exam (dissertation proposal) will be earlier and must occur by the end of spring semester of the first year back in the PhD program.
10. Because the student has already completed time in the PhD and in laboratory research, and may have substantial preliminary data, the advisor and student should plan a

timetable allowing completion of the PhD degree within 3 years of passing the USMLE step 1 exam.

11. Upon return to the MD curriculum (MS3 and MS4) students meeting academic and professional standards will continue on the standard financial package of the MD/PhD program: stipend, tuition waivers, and health insurance.
12. Continuation of the financial package will remain contingent on maintaining the academic and professional standards of the MD portion of the curriculum.
13. Students may **NOT** work toward any additional degrees/certificates as part of this program.
14. PhD students admitted to the MD program pending School of Medicine approval may defer admission for one year. If the student defends their dissertation prior to starting the MD curriculum and thus does not need to reenter the PhD program, they will not be eligible for a stipend or tuition waiver.

Mentor conflicts and changing mentors

Occasionally students need to change mentors in the course of completing their dissertation research. The protocol to be follows varies depending on the reason:

1. Mentor has left the University and you are remaining at WVU. In this situation, you should immediately meet with your graduate program director and set up a plan based on whether or not you will continue on the same project and/or if the mentor will remain involved after he or she leaves. Regardless, you should expect to have another faculty member as an on-site advisor and you should expect to be moved into the laboratory of the on-site advisor or another faculty member conducting similar research.

2. You are not getting along with your mentor. Unhappiness in your chosen laboratory and/or with your mentor does not mean that you will definitely need to leave the laboratory. The key to handling these situations effectively is to act as soon as you sense a problem. Try to effectively use your annual review of your IDP as a time to bring up issues but if issues occur in between these reviews, don't wait, act.

First, discuss with your mentor what is troubling you. The mentor may not realize that you were having trouble and may be willing to work with you on a solution. Consider if you were expecting the mentor to fill too many roles and that additional mentors, either dissertation committee members or other faculty, may be helpful for concerns that are less "research-based".

Second, if talking with your mentor or spreading mentoring roles does not work, immediately involve another faculty member. Ideally, this should be the graduate program director and/or the department chair most associated with your program as they might facilitate and resolve the issues. The Assistant Vice President for Graduate Education should also be involved and can participate in resolving the problem, if necessary.

Third, if remaining in the mentor's laboratory is no longer an option, you need to work with the Assistant Vice President for Graduate Education, to identify a new mentor. The Assistant Vice President will discuss with you faculty who can be considered for a role as a new mentor, will contact candidate faculty regarding their willingness to consider you for their laboratory, and will then provide you a list of candidate mentors.

Fourth, candidate mentors, identified in step 3, will need to be interviewed by you regarding the projects/questions that you might work on. A trial period is then established to determine if the laboratory is a good fit. The trial period is generally at least 2 weeks but should not extend beyond a month.

Fifth, once a new mentor is found, you need to re-do your student assignment form indicating the new mentor and have this approved by the Office of Research and Graduate Education, and you need to update your committee approval form. This will both indicate the new mentor and ensure that the committee is appropriate for the new project. If you will be deleting committee members, please inform them in writing that they will no longer be on your committee and thank them for their service or willingness to serve. If the timing is such that

you may be delayed in completing the candidacy exam, you need to petition the Graduate Program Director and the Assistant Vice President for Graduate Education for an extension and a firm date will be determined at which time the exam will be taken.

Finally, you must **refrain from any negative comments about the previous mentors**. Mentor/mentee relationships fail. Fortunately, this is not often but in each case, it reflects mutual problems that could not be overcome. No one person is at fault and thus no blame should be assigned. Maintaining a professional approach will result in a smooth transition.

Regardless of the reason for the change in mentor, to continue in the PhD program you must successfully find a faculty member willing and able to advise you on your dissertation research. This mentor must be approved by the Office of Research and Graduate Education prior to joining the laboratory. Failure to find a new mentor may result in dismissal from the graduate program.

Guidelines for preparation of theses and dissertations

Neither the University Graduate Catalog nor the Office of Research and Graduate Education provide strict dictates for the structure of theses and dissertations. Students and faculty should check with individual graduate programs to determine if they have specific requirements. The following is a guideline of suggested styles and some details for preparing for final submission to the Electronic Thesis and Dissertation database (ETD).

The most common formats for a dissertation or thesis will follow one of 2 styles:

Style 1: (more common for theses)

Literature Review
Materials and Methods
Results
Discussion
Conclusion
References

Style 2: (more common for dissertations)

Literature Review
Paper 1
Paper 2
Etc
Conclusions

Literature Review

The purpose of the literature review is to both demonstrate that the student has read a breadth of literature relevant to the dissertation topic and to introduce the topic, the pertinent background, and most importantly to present the gaps in our current knowledge that lead to the hypothesis that was tested as part of the thesis or dissertation research. There are no strong guidelines for length of the literature review and the student should discuss expectations with both his/her advisor and advisory committee.

The literature review should not just catalog facts and previous studies but rather should be an in-depth critique of these. Avoiding referring to specific authors in the sentence structure is the best way to keep the writing focused on the knowledge to be presented rather than just listing relevant studies. Likewise, in writing the literature review, the student should already have read the relevant literature and should write from their knowledge base and then go back and reference the material appropriately. This technique also helps to guard against inadvertent plagiarism of material from individual papers and reports.

Figures in this section should be to illustrate general concepts. Use of figures from specific papers representing data from that paper should be avoided. A cartoon or figure

illustrating the hypothesis to be tested or the model for the work to follow can be very useful to add clarity to the document.

References for this section should reflect the original report for that piece of knowledge and not be a secondary review. If style 2 is being used, the references for this section should appear at the end of this chapter as opposed to at the end of the final document.

Materials and Methods

If using style 1, the second chapter is the experimental details for the subsequent sections. This should be written in sufficient detail to allow a reader to repeat the experiments. In general, this section should be in more detail than one would find in a publication so it can be a resource for subsequent researchers to repeat or extend the findings in the thesis or dissertation. If style 2 is used, materials and methods are included in each separate chapter. If more detail is required on a specific technique, this can be added to an appendix.

Results and Discussion

In style 1, the presentation of the results and subsequent discussion would follow the format of a manuscript. Figures and table appear close to where they are cited in the document. All figures and tables should have legends.

Papers as chapters

When the work of the thesis or dissertation has been published or is being prepared for submission, it is allowable to simple insert the completed or published paper as a separate chapter. It need not be rewritten. If there are multiple authors, the student should indicate what his/her contribution was to the paper. In general, the student should be a first author on these papers or have contributed significantly to the development of the hypothesis and the execution of the experiments. Papers in which the student has contributed only a single figure, should be avoided.

Conclusion

This section provides a final summary of the work and is particularly important when style 2 is used. This section need not be long but should integrate the various chapters and provide future directions for the work.

References

The style for citations is up to the program, discipline, and/or advisor. In general, a style that includes all authors and titles of the papers is most useful for later reference.

Acknowledgements (optional)

A section at the beginning of the document to acknowledge the help of others in completing the work is a nice tradition but not required. This section can be personal but should remain professional.

Appendix (optional)

Some advisors like the student to summarize unpublished or orphan results in the appendix. This is optional and is generally for the convenience of the laboratory as well as documenting the work done by the student.

Special notes for depositing with ETD

1. If the student is reprinting papers that are already published, he/she needs to get permission from the journal to do so. Some journals have explicit statements to this effect on the website near the Guide to Authors. For other journals, this will require a letter to the editor of the journal. Permission to reprint is nearly always provided but may take some time to receive. Do not wait until the last minute to secure this information. Evidence of permission can be included in an appendix.

2. Follow the directions on the ETD site precisely. The formatting for the title pages is very specific and the inclusion of the student's CV is required.

3. Copyright. The ETD directions provide information on copyrighting the document. The following is designed to add some clarity to these directions. In general, any unique writing is protected by common law copyright of that work. Publications included in the work are already copyrighted and the copyright is owned by the journal. For most students, this will be sufficient protection. If some of the work is unpublished and will not be published, the student may in consultation with his/her advisor choose to secure additional copyright protection and will need to pay the associated fee for this copyright. If the work is a chapter that will be submitted in the near future, the student may choose to embargo the thesis or dissertation until the work can be published or a patent obtained. An embargo delays the release of the dissertation for view by others for a selected period of time.

How to set up a Dissertation (PhD) Advisory Committee:

1. All HSC PhD programs currently require a minimum of 5 members. These members should be able to help the student and you crucially evaluate their research and the student's progress toward the degree. Discourage the student from adding more people formally to the committee as it will be too hard to schedule meetings. You can have him/her to invite faculty with specific expertise to individual meetings to help with the review of the data.

2. The majority must be have full graduate faculty membership – the list can be found here for HSC faculty:
http://www.hsc.wvu.edu/resoff/graduate-education/faculty-resources/graduate-faculty-status/

and here for all WVU faculty (although this list is not yet complete):
http://graduate.wvu.edu/faculty-staff/graduate-faculty-information/list-of-members

3. The graduate faculty status that a faculty member has in his/her home department is honored for committee service throughout the University (i.e., the faculty member does not need to be reapproved by HSC).

4. One member must be from a program /discipline different from the student's program. This helps the student learn to speak to a mixed audience.

5. One member can be from another University provided he/she is an active scientist.

6. Chair of the committee must have full graduate faculty status. Committees can have co-chairs and only one of the co-chairs must have full graduate faculty status. The presence of the advisor on the committee and as chair varies by program. Consult your program handbook for these details.

7. If a member's status is downgraded after the committee is formed, the student does not need to change the composition of the committee.

8. All committees must be approved by the program director, dean of the school (or designee) and the Assistant Vice President for Graduate Education at the HSC. Additions and removals to the committee must be approved by the member being added or deleted, and the program director, dean, and Assistant Vice President for Graduate education.

Special note for mentors at NIOSH:

- NIOSH investigators cannot have full graduate faculty status because they are not full time WVU employees (adjunct does not count).
- A NIOSH mentor can be the primary advisor/mentor of a student and can be a co-chair of your committee, if allowed by that program (see point 6 above).
- Be careful when adding additional investigators from NIOSH to a committee so that the metrics in point 2 above are still met. Other scientists can be invited to sit in on meetings, *ex officio*.