



HANDBOOK FOR THE GRADUATE PROGRAMS IN THE BIOMEDICAL SCIENCES

FOR STUDENTS ENTERING DURING THE 2017 – 2018 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 Science Center Office of Research and Graduate Education outlines the activities, requirements, and standards for students in their 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. Cell 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 a general knowledge base for further study in these programs, and rotate through at least 3 laboratories in order to select a mentor for his/her dissertation research.

At the end of this first semester, students will have learned to:

- Integrate molecular, cellular, and integrative systems concepts
- Critically interpret the current scientific literature
- Develop critical thinking and problem-solving skills

Demonstrate technical skills in conducting scientific experimentation

- Articulate, verbally and in writing, the understanding of concepts during scientific discussions
- Discuss relevant scientific ethical issues presented as case studies
- Engage with fellow students and faculty and demonstrate teamwork

This handbook governs the student's activities while in the undifferentiated portion of the graduate program as well as global policies and useful information common to all graduate programs. 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 application. The admission's committee is composed of representatives from each of the 7 BSGPs and a graduate student representative. Applications are screened on the basis of overall GPA, GPA in science and math courses, GRE scores, personal statement, research experience, and 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.

IV. Orientation

Graduate studies start with a seven-day program known as Boot Camp that prepares them to successfully transition into graduate studies, provides time to interact personally and at social events with faculty and resident students, and for team building activity. 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. Actively participate in a journal club
4. Describe expectations on performance in research

5. Obtain journal articles when not within the WVU computing system
6. Use SOLE to obtain course information and graduate program information
7. Know when and how to use the Carruth Center
8. Work in a laboratory in compliance with Federal and WVU rules
9. Know how to make effective figures for presentations.
10. Demonstrate good oral presentation skills
11. Describe the purpose of the IDP, take the survey, convey the results to their mentor, and make plans for the future to improve their skills.
12. Describe the factors that play into establishing a good reputation in science
13. Handle experimental animals and operate in the animal quarters in compliance of federal and WVU rules
14. Join Linked In and the WVU Biomedical group

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

V. Curriculum

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
Discussion on 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

Discussions on Scientific Integrity

Graduate students at West Virginia University are required to meet particular federal and University-wide standards regarding the responsible conduct of research (RCR). To meet these standards, all graduate students undergo this training during the first 2 semesters at WVU. This course covers the required subjects specified by the National Institutes of Health (NIH). 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.

The Office of Research Integrity and Compliance (ORIC) will publish a training list derived from the CITI website database of those who have taken the training. This list will be published

daily on the ORIC website (<http://oric.research.wvu.edu>) in the “Training Lists” section. To remain in compliance with NIH standards, students will need to retake the CITI training every 3 years that the student is active in research at WVU.

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 702 scientific integrity, 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 Integrity	BMS 702	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). It is highly recommended that students use this writing course to begin drafting this document for their exam.

B. Transfer of Graduate Credits/Courses

Ph.D. students may transfer all credits with a B- grade or better with preference to those credits that apply directly to their graduate curriculum. Only graduate credits earned at academic institutions accredited at the graduate level may be transferred. WVU HSC Admissions & Records must receive an original transcript from the transferring institution.

Pending approval by the Assistant Vice President for Graduate education, transferred credits/courses may substitute for required courses in the first-year core curriculum and/or for advanced courses required by the seven Ph.D. training programs. Transfer credit will not be accepted for the scientific integrity courses.

When transferring credits, please provide information the name of the institution with address and zip code, the course number and name, and course description/syllabus as published by that institution. Please make reference to the WVU course it may replace if it meets a course requirement. Attach the original transcript from the transferring academic institution to this form and deliver in hand to the Office of Research & Graduate Education for final approval. Final decisions regarding substitution of required courses with transferred courses will be made by the Assistant Vice President for Graduate education in consultation with Course Coordinators, Graduate Admissions Committee, and/or Graduate Director of the specific graduate program.

C. Other Program Activities

1. Seminars and Journal Club

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 undue 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

This information will be used to build the necessary skill set and to help in decisions regarding future career options. 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 program will use the IDP at Science Careers (<http://myidp.sciencecareers.org/>). All incoming Biomedical students will complete this IDP and discuss their results with a faculty advisor during Boot Camp, the week before school starts. Once the student joins a laboratory, he/she is to review the IDP with the dissertation mentor. The IDP is reviewed annually and reported using the IDP Annual Review form

(available under Forms). The form is placed in the student's file in the Office of Research and Graduate Education.

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

D. Registration

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 1 credit in summer semester (see information under A.3 above). 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.

STAR Web registration system: <http://registrar.wvu.edu/courses>

Registration Process

1. Point your browser to <http://www.mix.wvu.edu/>
2. You will see the "Mountaineer information Xpress" with the MIX Login Screen
3. Enter your Username and Password. If your MIX account is jdoe@mix.wvu.edu, then your Username is Jdoe. Your password is your 2-digit day of birth and the last 4 digits of your WVU ID.
4. Click "OK"
5. On the next page, click the STAR tab on the top
6. Click "Click here to enter STAR"
7. Select the Student Services, Housing & Financial Aid link. You are now connected to STAR.
8. Select Registration link
9. Click on Select Term link. Use the pull down option to select desired term. Click on Submit
10. Select Add or Drop Classes link
11. Enter each CRN in the blocks and click on the Submit Changes button
12. You can review your schedule by selecting the Student Schedule or Student Detail Schedule links
13. If you are in STAR longer than 20 minutes MIX will time-out due to inactivity on the MIX pages

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.

VI. 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 following completing a laboratory rotation with that faculty member. Students have the opportunity to complete this by the 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 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.

Procedure for developing the available mentor list:

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.

Other considerations taken into account when assigning student mentorship:

1. Association (by the participating faculty mentor) with Institutional Fellowship Opportunities, such as the NSF IGERT (presently in NCE), 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)

Selection process:

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. 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 are welcome to 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.

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.

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

<u>Graduate Programs</u>	<u>Graduate Director</u>
Biochemistry & Molecular Biology	F. Bradley Hillgartner
Cancer Cell Biology	Scott Weed
Cellular & Integrative Physiology	Robert Brock
Exercise Physiology	John Hollander
Immunology & Microbial Pathogenesis	John Barnett
Neuroscience	Bernard Schreurs
Pharmaceutical & Pharmacological Science	Grazyna Szklarz

C. Selection of the Dissertation Advisory Committee

The Dissertation Advisory committee needs to be selected by the beginning of the fall semester of the second year and the student should have a meeting with the committee before the end of the fall semester. Dissertation Advisory committees contain 5 faculty members. 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 prior to any meeting of the committee.

Advisory committees must meet with the student at least annually to provide feedback on the student's research and evaluate progress toward completion of the degree. The first meeting with this committee should be in the fall of the second year. This is the committee that administers both the Dissertation proposal defense (candidacy exam) and the final defense.

Per University guidelines, one member of this committee must be from a program outside of the student's program and 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. This policy can be viewed at:

http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#committeeste xt

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.

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

The Ph.D. 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 rotation. Mentors are made aware of the guideline of approximately 20 h 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 Science 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 crises 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.

VIII. Academic and Professional Standards

A. Academic standards

1. Standards

It is expected that students will perform satisfactorily on all required courses. To remain in good standing in the Ph.D. 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 Research. 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.

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.

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.

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 (IF).

NOTE: Students cannot graduate with an F grade on the Plan of Study. 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.

B. 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;
- in their publications adequately summarize previous relevant work;
- when acting as reviewers will treat submitted manuscripts and grant applications confidentially and avoid inappropriate use; and

- 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 to 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 time 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 to 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.

C. 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 Review and 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.

IX. Financial Package and Fees

A. Stipend & Tuition Coverage

PhD students receive a stipend (currently \$25,000), 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.

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 starts in August. The insurance only covers the student. The cost of adding family members to the policy must be born 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.

X. Graduation Requirements

A. Successful Completion of the Ph.D. Degree Requires:

1. 3.00 GPA, no D's or F's, and no U's in research
2. Proper registration and payment of fees
3. Passage of the benchmark exams:
 - a) Qualifying (preliminary) Examination
 - b) Dissertation Proposal (candidacy exam)
 - c) Dissertation Defense
4. Annual reports of completion of the IDP and advisory committee meetings
5. First-Author manuscript – at least one based on dissertation research published or in press
6. Submission of required Approval Forms
7. Electronic Submission of Dissertation
8. Application for Graduation and Diploma Form
9. Exit interview with Assistant VP for Graduate Education

B. Full-Time Student Status

To receive a stipend, students are required to register for a minimum of 9 credits for the fall and spring semesters and 1 credit for the summer semester. Credit hours exceeding 16 require prior approval by the Associate Provost of WVU.

C. Ph.D. Examinations and Defense

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

1. Qualifying (preliminary) Examination

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. Dissertation Proposal Defense (candidacy exam)

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. Portions of this grant application 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 Ph.D. degree and the 5-year clock for completion of the degree starts.

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

AHA. 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.

NOTE: 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 do so will result in dismissal from the graduate program.

3. Dissertation Defense

The student defends his/her dissertation research for the Ph.D. 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/#thesedissertationstext

D. First author publication requirement

Students must have at least one first-author manuscript, based on their Ph.D. dissertation research, published or accepted for publication in a peer-reviewed journal **before** they defend their dissertation research. In the case of joint first-author manuscripts, the manuscript can only fulfill this requirement for one author. 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. With some research projects, this will result in multiple first author publications.

E. Time limit to degree

University policy states “doctoral candidates are allowed no more than five years in which to complete the remaining requirements of their programs after being admitted to doctoral candidacy.” Under extraordinary circumstances extensions can be obtained but these situations must be grave to fall into this category. For more information see: http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#timelimitstext

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

Graduates can attend the graduation ceremony for the School of Medicine or School of Pharmacy. These ceremonies are held on Saturday/Sunday in the second week of May. The School of Medicine ceremony features the graduates of 6 of the Biomedical graduate programs, the MD/PhD Scholars Program, and the MD program. The School of Pharmacy ceremony features graduates of the Pharmaceutical and Pharmacological Sciences PhD program and the PharmD program. At these ceremonies, the student's mentor places the PhD hood on the graduate and the Ethical Affirmation for Scientists is recited. This oath was originated at WVU and was published in the journal, *Science*, in 2003.

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WVU Health Science Center

Acknowledgement Form for entering graduate students

As an entering graduate student, I agree to review the policies and procedure 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 Science 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 Science Center.

I have read and understand the Handbook of the Biomedical Graduate Programs at the WVU Health Science 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

2267 HSS

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.

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.

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 16, 2017.

Rotation 1: Monday, August 21 – Friday, September 22, 2017

Choices for second rotation are due to Dr. Salati by 5PM Wednesday, September 20, 2017

Rotation 2: Monday, September 25 – Friday, October 27, 2017

Choices for third rotation are due to Dr. Salati by 5PM Wednesday, October 25, 2017

Rotation 3: Monday, October 30 – Wednesday December 6, 2017

Choices for dissertation laboratory are due to Dr. Salati by 5PM Friday, December 15, 2017

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 other 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 B or D performance 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

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
2267 HSS
304-293-7759
lsalati@hsc.wvu.edu

Course Description:

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 to do two or more of the following:

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 STEM careers that do not involve traditional laboratory approaches
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
6. Identify one or more new approaches to finding a position outside of academia

Prerequisites:

BMS 700 Scientific Integrity; 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

How to choose 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 a proposal with the following components:

Topic: What will you be doing?

Time frame: When and for how long will you be gone and how many credits are being requested?

Location: Where will you be going?

Rationale: Why do you want to do this? Relate to research or career goals. Identify how this experience is not part of what would routinely be expected for the completion of your dissertation research.

Cost estimate: Identify mode of travel and estimated cost, identify number of nights stay and estimated hotel costs, if applicable.

Schedule:

The schedule will be largely dictated by the activity. Students can expect that some activities may involve weekend or evening sessions. In choosing the number of credit hours to request, 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.

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 than 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>.

[

**BMS 707 Experiential Learning
Evaluation of Student Performance by the Host Facility**

Name of Experience or Facility: _____

1. Did the student arrive on time? Yes ___ No _____

Co

Comments: _____

2. Did the student behave in a professional manner during the experience?

Yes _____ No _____

Comments: _____

3. Was the student prepared? Had they read any required or suggested materials? Was there evidence that they had researched the experience ahead of time?

Yes _____ No _____

Comments: _____

4. What gaps in the student's knowledge did you notice that could be improved upon in their curriculum?

5. What recommendations can you provide for improvement of the experience?

Additional Comments:

Student Evaluation of a BMS707 Experience

Name/Date(s) of experience: _____

Name of student: _____

Please use a scale of 1 to 5 to answer the following questions. In some cases, all 5 ranks are given a descriptor.

1. How effectively was your time utilized?

1 = busy doing productive tasks

5 = large amounts of wasted time)

Please explain:

2. How helpful was the experience in refining your career goals?

1 = very useful – I am interested in learning more about this

2 = very useful – I now know I should look into other options

3 = useful – but did confirm that I am interested

4 = average – low quality of the experience made it difficult to refine goals

5 = did not inform my decision for or against

Please comment:

3. Rate the quality of the learning experience?

1 = very high quality

5 = poor quality consider revising or deleting

Please comment

4. Did the attendance of this experience hamper your progress towards your degree?

1 = No delay, informing my career decisions helps prevent distractions

2 = No delay, I worked extra hours to make up the difference

3 = Some delay as it broke the rhythm of my experiments

4 = Very distracting, cost me considerable time

5. Were you treated professionally and respectfully?

1 = yes, excellent on all accounts

5 = no, real issues here that we need to talk about

(note: you may choose not to answer point 5. If you do not want to answer this, please make an appointment with the Assistant Vice President for Graduate Education to discuss your experience)





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.



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: _____

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	1 st 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	M.D./Ph.D. Scholars Training Program ²

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 Ph.D. 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.

¹PPS degree is awarded by the WVU School of Pharmacy

²only applies during the Ph.D. phase of the M.D./Ph.D. 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 Ph.D. 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 deadline is binding. For M.D./Ph.D. 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 contains his/her application, transcripts, graduate forms, correspondence, and other relevant communications or notifications. The file is kept in duplicate with one copy residing with the graduate program and the second copy 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 Ph.D. 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 Ph.D. students and 8 years total in the program for M.S. 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) (<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 Ph.D. 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, M.S. 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.
- 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 **M.S.** students and students in the first year of the biomedical **Ph.D.** 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 M.D./Ph.D. 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.

Changing mentors

Occasionally students need to change mentors in the course of completing their dissertation research. The protocol to be followed 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.

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 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, a member of your committee, the department chair most associated with your program or the Assistant Vice President for Graduate Education (note: this individual is always willing to help but may require that you ultimately go through channels with your program director).

Third, if remaining in the mentor’s laboratory is no longer an option, you need to work with the graduate program director and the Assistant Vice President for Graduate Education, to identify candidate mentors.

Fourth, candidate mentors will need to be interviewed as to their willingness to accept a new student and a trial period is 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 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.

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 simply 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 outside of 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. 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. After the committee is formed, if a member's status is downgraded, 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. Use the ad hoc method to include additional expertise at meetings.

How to set up a Thesis (MS) Advisory Committee:

1. Minimum of 3 members; if the student is changing from the PhD to the MS degree, the committee can remain the same or one or two members can be dropped.
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 can be from another University provided he/she is an active scientist.
5. Chair (co-chair) of the committee is your thesis advisor (except NIOSH)
6. All committees must be approved by the program director, dean of the school (or their 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 students 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. Use the ad hoc method to include additional expertise at meetings.