



**UMMC**

**Graduate Program  
in Neuroscience**

# **2016-2017 Student and Faculty Handbook**

**Graduate Program in Neuroscience**

**University of Mississippi Medical Center  
Jackson, MS 39216**

# TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION .....</b>	<b>4</b>
<b>II.</b>	<b>DEGREE REQUIREMENTS .....</b>	<b>5</b>
	A. SUMMARY.....	5
	B. SCHOLASTIC REQUIREMENTS, PROBATION AND DISMISSAL.....	6
<b>III.</b>	<b>PROGRAM RESPONSIBILITIES .....</b>	<b>7</b>
	A. STUDENTS AND MENTORS RESPONSIBILITIES.....	7
	B. STIPEND SUPPORT.....	9
<b>IV.</b>	<b>PROGRAM EXPECTATIONS .....</b>	<b>9</b>
	A. ADDITIONAL PROGRAM EXPECTATIONS.....	9
	B. COURSE OF STUDY OVERVIEW .....	10
<b>V.</b>	<b>COURSEWORK AND ROTATIONS .....</b>	<b>11</b>
	A. COURSE DESCRIPTIONS .....	11
	B. LABORATORY ROTATIONS .....	12
	C. CURRICULUM OVERVIEW .....	13
<b>VI.</b>	<b>QUALIFYING EXAMS .....</b>	<b>15</b>
	A. GENERAL SUMMARY .....	15
<b>VII.</b>	<b>ADVISORY COMMITTEE .....</b>	<b>16</b>
	A. COMPOSITION OF ADVISORY COMMITTEE .....	16
	B. ADVISORY COMMITTEE MEETINGS .....	16
	C. RESPONSIBILITIES OF ADVISORY COMMITTEE MEMEBERS.....	16
<b>VIII.</b>	<b>RESEARCH PROPOSALS AND PROGRESS REPORTS ....</b>	<b>17</b>
	A. GENERAL SUMMARY .....	17
<b>IX.</b>	<b>THESIS FORMAT .....</b>	<b>19</b>
	A. OVERVIEW .....	19
	B. THESIS OUTLINE .....	20
<b>X.</b>	<b>THESIS DEFENSE/EXAM FORMAT .....</b>	<b>21</b>
	A. PROCEDURE FOR DISSERTATION DEFENSE .....	21
<b>XI.</b>	<b>PROGRAM GOVERNANCE AND COMMITTEES .....</b>	<b>22</b>
	A. OVERVIEW .....	22

B. PROGRAM STRUCTURE .....	22
<b>XII. TEACHING .....</b>	<b>23</b>
A. TRAINING IN TEACHING .....	23
<b>XIII. LEAVE POLICIES .....</b>	<b>24</b>
A. SICK LEAVE.....	24
B. VACATION AND HOLIDAYS .....	24
C. PARENTAL LEAVE .....	25
D. LEAVE OF ABSENCE .....	25
<b>XIV. HEALTH AND WELLNESS .....</b>	<b>25</b>
A. STUDENT ASSISTANCE PROGRAM .....	25
B. STUDENT FITNESS.....	26
C. STUEDENT RECREATION .....	26

# I. INTRODUCTION

## Welcome to the Graduate Program in Neuroscience

The Program in Neuroscience is an interdepartmental PhD degree program with collaborating faculty from both basic and clinical departments at the University of Mississippi Medical Center. The objectives for the Program in Neuroscience are to educate and train individuals to become independent research investigators, teachers and mentors with a broad understanding of the neurosciences and focused training within a subset of the areas of study that comprise neuroscience.

The purpose of this handbook is to clearly outline the requirements that must be completed during the course of the PhD studies. In addition, this handbook outlines the expectations and responsibilities of students, mentors, and committee members, and describes the curriculum and the program governance structure.

This handbook was a result of the collective effort of the Executive Committee of the Graduate Program in Neuroscience, and we thank the past and present members of that committee who were involved: Drs. Lique Coolen, Donna Platt, Doug Vetter, Elise Gomez-Sanchez, Jim Shaffery, Kevin Freeman, Javier Miguel-Hidalgo, Barak Gunter and Drew Townsend. We also wish to acknowledge the support and assistance of Ms. Karneilla McGee, Program Coordinator, who played a key role in the development of this Handbook and in assembling the final document.

As always, please feel free to contact us if you have any questions.

Sincerely,



Donna M. Platt, Ph.D.  
Associate Professor  
Departments of Psychiatry & Human Behavior  
And Neurobiology & Anatomical Sciences  
Director, Graduate Program in Neuroscience

## II. DEGREE REQUIREMENTS

### A. SUMMARY

The Program in Neuroscience (PIN) is a course of study leading to a PhD degree. It is an interdepartmental degree program with collaborating faculty from both basic and clinical departments at the University of Mississippi Medical Center. The objectives for the Program in Neuroscience are to educate and train individuals to become independent research investigators, teachers and mentors with a broad understanding of the neurosciences as well as focused training within a subset of the areas of study comprising neuroscience. These objectives apply whether the individual's ultimate career goal is to work in academic, government, industrial or administrative settings. To receive the doctoral degree, the student must demonstrate evidence of proficiency and distinctive attainment in the neurosciences, and a recognized ability for independent investigation as presented in a dissertation based upon original research. The following minimal requirements must be fulfilled to achieve the PhD degree in Neuroscience.

**Core Courses.** During the first year of study, students are required to take: Foundations in Neuroscience (NSCI 701), which is an intensive overview of neuroscience coupled with analysis of relevant primary literature; Fundamental Biochemistry (BIOC 704), a graduate-level general biochemistry course; Statistics (NSCI 710), a tutorial focusing on common statistical approaches used in neuroscience research, and Special Topics in Neuroscience course (NSCI 708) focusing on current issues of interest in neuroscience. Students also engage in a series of up to six 4-5 week surveys of different research laboratories affiliated with the Program (NSCI 790). During the second year of study, students engage in intensive Senior Laboratory Rotations (NSCI 791) which are typically conducted in the students' planned dissertation laboratories. Throughout the first two years of study, students also engage in professional skills development with courses in Neuroscience Journal Club (NSCI 720), Scientific Writing (NSCI 721), Responsible Conduct in Research (ID 709), and Professional Skills (ID 704).

**Requirements for Dissertation Candidacy.** In addition to the Core Courses described above, students must successfully pass a Qualifying Examination consisting of developing and defending a research proposal selected from 5-10 topics submitted by PIN faculty. This is completed in the summer between the second and third years. Successful completion is required for admission to candidacy status.

**Additional Graduation Requirements.** Students are required to have the results of their research accepted for publication prior to awarding of the degree. This manuscript must meet the publication requirement of the Graduate School; that is, the student must be listed as the sole first author on at least one publication reporting research findings (not a review article) in a national or international peer-reviewed journal.

## **B. SCHOLASTIC REQUIREMENTS, PROBATION AND DISMISSAL**

**Scholastic Requirements.** In order to be in Good Academic Standing, a PhD student must maintain a grade point average (GPA) of 3.0 or higher based on a four point grading scale or an 80% weighted numerical average. In addition, Program students must make a 90% or above each semester in the Foundations in Neuroscience course (NSCI 701).

Under such a scale, a grade of A is assessed 4 points, a B 3 points, a C 2 points, and an F 0 points. A grade of F is not acceptable for graduate credit but is included in the calculation of the student's GPA. A grade of C is acceptable for graduate credit, but an overall GPA of  $\geq 3.0$  must be maintained. If a student receives an F in a course, the course must be re-taken. Repeating a course must be recommended by the Program Director and course director. When a course is repeated, the second grade will be used in determining the student's overall weighted average; however, the first grade will remain on the transcript. A course may be repeated only once.

In certain courses, a mark of P is given to indicate that a student has received graduate credit but has been assigned no point grade in the course. Courses that are graded in this way include the statistics tutorial (NSCI 710), the journal club (NSCI 720), writing course (NSCI 721) and rotation survey course (NSCI 790). However, in courses approved for the P mark, course directors may assign the grade of F.

**Probation.** If at any time during an academic year the progress of a student is considered unsatisfactory, the student may be placed on academic probation or dismissed from the program. Students whose GPA falls below 3.0 or an 80% weighted numerical average after the first year will be placed on academic probation and have 3 continuous semesters to raise their GPA to an acceptable level. Failure to do so will result in dismissal.

**Dismissal.** Students may be dismissed for unsatisfactory academic performance, failure to pass qualifying examinations, breaches of scientific integrity, e.g., plagiarism, falsification of data, etc., or personnel issues, e.g., harassment. Dismissal of a student from the Program and the Graduate School is initiated by the Program Director and approved by the vote of the Program Executive Committee. A recommendation for dismissal is then submitted in writing to the Dean of the Graduate School (Dr. Joey Granger). Following his approval, Dr. Granger will notify the student in writing of the intention to dismiss. An appeals process is in place and available to the student.

### III. PROGRAM RESPONSIBILITIES

#### A. RESPONSIBILITIES OF STUDENTS AND MENTORS

Doctoral training is a large investment for both the student and the research mentor. A clear understanding of the respective responsibilities for the student and research mentor optimizes the working relationship over the course of the training period and helps to provide architecture for the training plan. The best training experience, for both the student and the research mentor, is one in which both parties understand and meet the key expectations for their roles.

##### Responsibilities of the Student

- The student is expected to devote a minimum of 40 hours per week to work to the attainment of the degree for the duration of the training period.
- The student will be responsible for learning and adhering to the program requirements for the degree as outlined in this handbook and to the requirements set by SGSHS as outlined in the Annual Bulletin.
- The student will work closely with the research mentor and the Research Advisory Committee to develop a dissertation project.
- All third year students and above will present abstracts at SGSHS Research Day.
- The student will exhibit scholarly initiative in the gathering and exhaustive review of scientific literature pertinent to dissertation research.
- The student will adhere to the expectations communicated by the mentor for laboratory work, including experimental protocols, data management, daily schedules, and time frames for the completion of work.
- The student will be prompt for all meetings and will respond to communications (email and other) in a timely manner.
- The student will alert the mentor and Program Director of leave-time requests well in advance and adhere to the Program's regulations for leave-time requests.
- The student will adhere to the professional and ethical research guidelines set by the University and National and International agencies and as outlined in course ID 709.
- The student will acknowledge the contributions of co-workers when presenting research findings.
- The student will respect co-workers in the laboratory and make every effort to resolve conflicts while maintaining professional working relationships.
- The student will take responsibility for promptly communicating concerns and needs to the mentor throughout the training period.
- The student will discuss his/her Individual Development Plan (IDP) with their mentor throughout the training period.
- The student will present abstracts at one or more national conferences in each post-candidacy year and will optimize the value of the time spent at the conference by attending talks, viewing posters, and pursuing networking opportunities.

- The student will write first-author papers in a timely manner upon the completion of studies.
- All formal presentations, manuscripts and documents related to their training and dissertation are expected to be made using the English language. If the primary language of the student is not English, or the student is not fully bilingual, the student, with the advice of the mentor and PIN as necessary, will ensure that he/she is proficient enough to produce clear, acceptable documents and presentations in English.

### **Responsibilities of the Mentor Toward the Student**

- The mentor will ensure that the student receives ample training for all laboratory tasks before allowing the student to work independently on those tasks.
- The mentor will clearly communicate expectations for laboratory work, including experimental protocols, data management, daily schedules, and time frames for the completion of work.
- The mentor will provide the scientific guidance and the resources needed to complete the student's dissertation research.
- The mentor will help the student form an advisory committee in a timely manner.
- The mentor will allot time for structured, regular meetings with the student to evaluate the student's progress and discuss topics related to the student's research and professional development.
- The mentor will discuss the student's IDP at any time the student requests, but at least once per year.
- The mentor will be responsible for stipend and research support for the student consistent with the policy described below (Stipend Support)
- The mentor will cover the costs of abstract submission, registration, and travel/housing accommodations for *at least* one national scientific conference for each year in the post-candidacy period. Institutional sources can be used to defray these costs.
- The mentor will create networking opportunities for the student (e.g., by facilitating interactions with research colleagues at scientific conferences).
- The mentor will train the student to write grants and scientific manuscripts.
- The mentor will provide opportunities for the student to submit multiple first-author manuscripts.
- At the outset of each project, the mentor will lead a discussion with the student and other participants in the study to explicitly outline the scientific roles of each participant and the order of authorship for the resulting publication(s). Changes in the arrangement over the course of the study period will be made through group discussion.
- The mentor will provide guidance in identifying and applying for post-graduate positions.
- The mentor will support the student's career advancement by serving as a professional reference after the completion of the doctoral degree.

## **Responsibilities to the Program in Neuroscience of Faculty mentoring graduate students:**

Once a faculty member accepts a student in the laboratory, they commit to the following responsibilities:

- Provide for student's stipend starting summer of G3 and throughout the entire remaining period of thesis research (even if it extends into G6).
- Teach at least 6 hours per year in courses of the Program in Neuroscience.
- Serve on committees of the Program in Neuroscience when requested.
- Serve as a role model for the Program in Neuroscience students. This includes attending the research seminars of external speakers and all Program in Neuroscience student seminars in the Seminar series of the department of Neurobiology & Anatomical Sciences.

### **B. STIPEND SUPPORT**

The Program is committed to providing stipend support for all full-time graduate students during the five years of their training. The Graduate School provides stipend support for 2 years and 10 months for students, usually during the first three years of their training, whereas for the remaining period, students are supported by funds provided by research grants, training grants, or departmental funds. When a faculty member agrees to serve as advisor for a student, he/she is doing so with the explicit expectation and commitment of providing all stipend support for that student beyond the time of support offered by the Graduate School. If there is a gap or shortfall in the advisor's funding, the first line of backup is support from the department of the faculty member's primary appointment. If the department cannot provide that support, then the Program and Graduate School will attempt to do so, but there is no guarantee of that funding. Thus, it is imperative that students choose advisors with sufficient funds available to ensure that they will be able to maintain stipend support, as well as have access to research resources, for the entire time of their training.

## **IV. PROGRAM EXPECTATIONS**

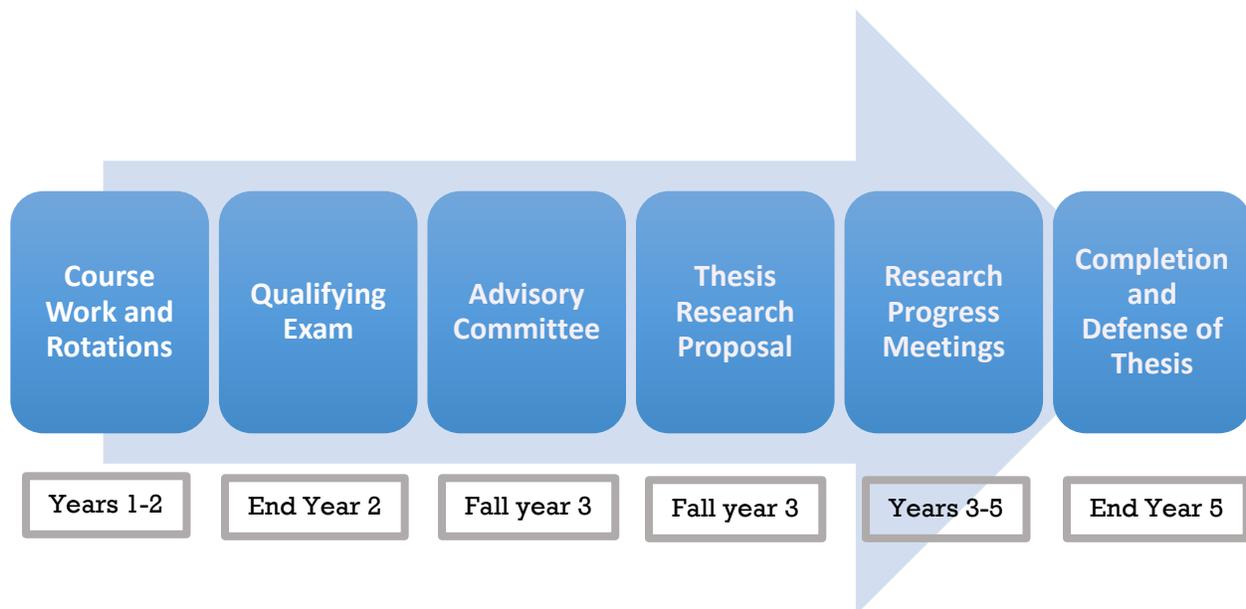
### **A. ADDITIONAL PROGRAM EXPECTATIONS**

- Attend Seminar Series
  - Guest speakers and Student seminars
  - Read enough about the topic to follow the talk & formulate questions
  - Apologize for your absences to the speaker and seminar director.

- Research Day SGSHS (Fall)
- Research Day Neuroscience (Spring)
- Be an active participant in PIN:
  - Luncheons with seminar speakers and faculty applicants
  - Volunteer during recruitment events
  - Volunteer for Brain Awareness and SGSHS outreach events
  - Serve as the student representative on the PIN Executive Committee
- Support your fellow students
  - Attend all student presentations in NSCI 791 (each semester)
  - Take an active interest in others' work
- Professional behavior
  - Respond timely to emails and other pertinent official communications
  - Meet deadlines

*Mentors should strongly encourage these expectations*

## **B. COURSE OF STUDY OVERVIEW**



## V. COURSEWORK AND ROTATIONS

### A. COURSE DESCRIPTIONS

**NSCI 701. Foundations in Neuroscience.** This course provides a thorough overview of neuroscience over two semesters spanning 95 two hour lectures. It systematically covers neuroscience in an integrated fashion covering the following main topics: 1) Cellular Neurobiology; 2) Electrophysiology and Molecular Biology of Neural Potentials; 3) The Synapse; 4) Sensory Systems; 5) Motor Systems; 6) Developmental Neurobiology; 7) Regulatory Systems; 8) Neuropharmacology; 9) Higher Order Function; and 10) Neurobiology of Brain Disorders. The course also presents 10 “technical lectures” that cover techniques- procedures, when and why they are used, assumptions made in the techniques, and final analyses made possible by the techniques. The course includes both didactic and primary literature-based content and is the first required course in the Program in Neuroscience. (6-6 semester hours, Fall and Spring semesters).

**NSCI 708. Special Topics in Neuroscience.** A small group faculty-led discussion course on selected topics in neuroscience offered by groups of faculty. Students discuss primary literature with the faculty (3 semester hours, Summer semester).

**NSCI 710. Tutorials in Neuroscience.** Tutorials cover specialized topics in neuroscience in depth, in a small group setting. Courses consist of intensive, directed reading and discussion and is intended to provide students with the opportunity to study specialized topics in neuroscience with faculty experts in that area. The objective for this course in this academic year is to study experimental design, scientific rigor, and use of biostatistical methods in neuroscience (1 semester hour, Spring semester).

**NSCI 720. Neuroscience Journal Club.** A review of significant issues in neuroscience including literature review and discussion of recent data and news. (1 semester hour, Fall and Spring semesters)

**NSCI 721. Scientific Writing in Neuroscience.** An introduction to scientific writing that includes preparation of abstracts for scientific meetings, presentations at meetings, preparation of a scientific manuscript for publication and, finally, preparing a grant proposal for extramural funding in the NIH style. (2-2 semester hours, Fall and Spring semesters)

## **B. LABORATORY ROTATIONS**

Students in the Program in Neuroscience are required to take two laboratory rotation courses. In their first year, students enroll in NSCI 790 – Neuroscience Laboratory Survey; while in their second year, they enroll in NSCI 791 – Senior Laboratory Rotations. Each course has specific objectives.

**NSCI 790. Neuroscience Laboratory Survey.** This course is comprised of 4-5 week rotations in up to six active research laboratories in the Program in Neuroscience. A minimum of 15 hours/week are expected to be spent in the chosen laboratory. The goal of these rotations is to expose the student to the breadth of research occurring in the Program in Neuroscience. Additionally, exposure to the approaches and culture of multiple laboratories should allow for the student to make an informed choice when selecting a dissertation mentor and advisory committee members. (3-3 semester hours, Fall and Spring semesters)

**NSCI 791. Senior Laboratory Rotations.** These are intensive laboratory rotations intended for students to begin research in their planned dissertation laboratories. Thus, all three rotations can be within the same laboratory. However, rotations may also be conducted in up to three different laboratories depending on the student's training needs and interests. 20-40 hours/week are expected to be spent in the chosen laboratory depending on the semester. (9-6-6 semester hours, Summer, Fall and Spring semesters)

### **Dissertation Research**

**Following successful passing of the Qualifying exam (see below), students will spend up to 3 years on their dissertation research:**

**NSCI 798. Dissertation Research in Neuroscience.** (9 semester hours)

## C. CURRICULUM OVERVIEW

YEAR 1					
		FALL		SPRING	
		Course	Credits	Course	Credits
		NSCI 701 Foundations in Neuroscience	6	NSCI 701 Foundations in Neuroscience	6
		BIOC 704 Fundamental Biochemistry	7	ID 709 Responsible Conduct of Research	1
				NSCI 710 Statistics	1
		NSCI 720 Journal Club	1	NSCI 720 Journal Club	1
		NSCI 790 Laboratory Rotation Surveys	3	NSCI 790 Laboratory Rotation Surveys	3
		TOTAL	17	TOTAL	12

YEAR 2					
SUMMER		FALL		SPRING	
Course	Credits	Course	Credits	Course	Credits
NSCI 708 Special Topics in Neuroscience	3	NSCI 721A Scientific Writing in Neuroscience	3	NSCI 721B Scientific Writing in Neuroscience	3
		NSCI 720 Journal Club	1	NSCI 720 Journal Club	1
NSCI 791 Senior Laboratory Rotation	9	NSCI 791 Senior Laboratory Rotation	6	NSCI 791 Senior Laboratory Rotation	6
TOTAL	12	TOTAL	10	TOTAL	10

YEAR 3					
SUMMER		FALL		SPRING	
Course	Credits	Course	Credits	Course	Credits
<b>Qualifying Exam</b>	N/A			ID 714 Professional Skills	3
		NSCI 720 Journal Club	1	NSCI 720 Journal Club	1
NSCI 791 Senior Laboratory Rotation	9	NSCI 798 Dissertation Research	1	NSCI 798 Dissertation Research	1
<b>TOTAL</b>	9	<b>TOTAL</b>	2	<b>TOTAL</b>	5

YEAR 4					
SUMMER		FALL		SPRING	
Course	Credits	Course	Credits	Course	Credits
<i>Elective: NSCI 708 Special Topics in Neuroscience</i>	3	<i>Elective: ID 715 Teaching Skills (Recommended for Year 4; also possible Year 3)</i>	3	<i>Elective: ID 716 Teaching Skills (Recommended for Year 4; also possible Year 3)</i>	3
		NSCI 720 Journal Club	1	NSCI 720 Journal Club	1
NSCI 798 Dissertation Research	1	NSCI 798 Dissertation Research	1	NSCI 798 Dissertation Research	1
<b>TOTAL</b>	4	<b>TOTAL</b>	5	<b>TOTAL</b>	5

YEAR 5					
SUMMER		FALL		SPRING	
Course	Credits	Course	Credits	Course	Credits
NSCI 798 Dissertation Research	1	NSCI 798 Dissertation Research	1	NSCI 798 Dissertation Research	1
<b>TOTAL</b>	1	<b>TOTAL</b>	1	<b>TOTAL</b>	1

## VI. QUALIFYING EXAM

### A. GENERAL SUMMARY

**Goal of the Qualifying Examination:** To determine whether the student is ready to be admitted to doctoral candidacy and undertake Ph.D. dissertation research. Specific skills tested include:

- Ability to identify and incorporate pertinent primary research literature into a plan for novel neuroscience research.
- Ability to identify key questions in the field.
- Ability to formulate testable hypotheses and to develop experiments to test them.
- Ability to design and describe positive and negative controls in a research plan, and the statistical evaluations necessary to interpret results from the proposed experiments.
- Ability to describe the entire range of potential results, to indicate how each type of result would be interpreted, to identify key follow-up steps, and design alternative approaches should the first line of research falter.

**Qualifying Examination Committees:** QE committees consist of three members **plus** one or both Qualifying Exam Committee co-chairs. One member is the faculty whose question is picked by the student, one member is faculty appointed by the co-chairs who brings expertise to numerous aspects of the topic covered by the question and/or relevant research design, and one member may be requested by the student.

**Timeline for the Qualifying exam:** Beginning in mid-May (generally 1-2 weeks following the end of the Spring semester of year 2), students will receive a list of exam questions (with faculty writing the question identified). Students will have one week to decide on which question to answer. Students have four weeks to produce their response to the exam question. Final oral exam is with anticipated during late June.

**Format of the Written Qualifying Examination:** The Qualifying Examination response is written following a typical R21-like NIH grant proposal style (7 pages total, excluding bibliography).

**Overview of procedure during the Oral Qualifying Examination:** Students deliver a 10-15 minute concise overview presentation of their research proposal. QE committee members ask questions about the experiments proposed, but students should anticipate that such questions can also include basic neuroscience tenets upon which the proposal is based, statistical analysis, and so on.

## **VII. ADVISORY COMMITTEE**

All students must form an advisory committee within six weeks after passing the Qualifying Exam, i.e. the start of Candidacy. Members of the advisory committee will have the appropriate expertise to help students successfully navigate their thesis research projects, provide professional development advice, and should be viewed as a valuable resource. Members can be consulted both informally as well as during the formal advisory committee meetings.

### **A. COMPOSITION OF ADVISORY COMMITTEE**

The committee consists of the research mentor (Chair of the committee), 2 (or more) faculty members of the Graduate Program in Neuroscience, and 1 (or more) graduate faculty from outside the Graduate Program in Neuroscience. The outside member can be graduate faculty at UMMC (in another graduate program), or at a different university.

Committee members are selected by the student and the mentor, and are subject to approval by the Program Director and Associate Director. Students and research mentors will submit the names and short descriptions of the expertise of the proposed advisory committee member relevant to the thesis research to the Education Coordinator of the Program in Neuroscience for approval by the Program. Upon program approval, the student will submit the form to the Education Coordinator for final approval by the Graduate School. If a proposed member is from outside of UMMC, a CV must be submitted with the proposal and the form.

Executive Committee Representative: In addition to the above-mentioned members, a member of the Executive Committee of the Graduate Program in Neuroscience will be assigned by the Program Director to serve on the Advisory Committee. In addition to providing research and professional development advice, this member will report to the Executive Committee on the student's progress and oversee the overall quality of the thesis in relation to the Program's standards and requirements.

### **B. ADVISORY COMMITTEE MEETINGS**

Advisory Committee meetings take place at least once every 6 months. The first meeting takes place before the end of the fall term of the third year. Each meeting must be scheduled with the aid of the PIN Education Coordinator and dates of the meetings must be recorded in the Student Progress form.

### **C. RESPONSIBILITIES OF ADVISORY COMMITTEE MEMBERS**

Research Mentor's Responsibility: Make initial contact with potential advisory committee members to ask if they are willing to serve on the student's committee. Normally this will be done shortly after the student has passed the Qualifying exam, but changes in the advisory committee composition may occur at different times during the degree. Research mentors also are responsible for helping to ensure that advisory meetings occur on time.

Student's Responsibility: The student is responsible for scheduling the advisory committee meetings and ensuring they are completed on time as per Program and SGSHS guidelines. The student will work closely with the PIN Education Coordinator to schedule the meetings. Students also are responsible for distributing the Research Proposal and Progress Reports to the committee members and the Education Coordinator in time for the meetings.

Graduate Program in Neuroscience Executive Committee (EC) Representative Responsibility: An EC representative is assigned to each advisory committee and can act both as Program representative and scientific advisor if expertise is appropriate. At their discretion, an EC member can call for additional committee meetings should they believe more frequent and additional meetings are warranted. The EC member reports student progress during the monthly EC meetings. Finally, the EC member can answer any questions regarding the research proposal or progress report format, program or SGSHS guidelines, and serves as the student's advocate.

## **VIII. RESEARCH PROPOSALS AND PROGRESS REPORTS**

### **A. GENERAL SUMMARY**

Progress Reports are required for all advisory committee meetings. Progress reports provide members of the committee with an update of the research and academic progress of the student and form a starting point for discussion during the meeting. Progress reports also help the student to focus his/her thoughts and present the projects in a clear and concise manner. Progress reports should be prepared by the student with feedback from the research mentor. The report must be provided to the members of the advisory committee at least 3 business days prior to the meeting, by email. A copy must also be provided to the PIN Education Coordinator by email.

#### *Research Proposal and Progress Reports:*

A research proposal must be prepared by the student for the first meeting (to be scheduled before the end of the fall semester of the third year). Thereafter, the student will prepare a progress report for each of the advisory committee meetings (at least once every six months). Thus, the goal is to prepare the initial document (i.e. research proposal) for the first advisory committee meeting and then revise and update the document with changes and new information for subsequent advisory committee meetings (i.e. progress report). The progress report will therefore develop and grow as the student progresses through the program.

#### *What is included in the Research Proposal and Progress Report?*

A typical thesis consists of multiple aims/objectives that are related to a central theme, hypothesis, or overall goal. These aims typically result in multiple thesis chapters or publications (see thesis format). Therefore, the aims may either be closely related and test a single hypothesis, or may only be loosely related, but center on an overall theme that can be very broad. Students will therefore include **all** their research plans and

progress during the PhD years in the research proposal and progress reports. It is acceptable for a student to have “side-projects” in collaboration with other trainees or staff in the mentor’s laboratory, and such projects may lead to co-authorships. Such side-projects are summarized during meetings with the advisory committee. But the majority of the student’s time should be spent on the thesis research and all research progress and plans are included in the progress reports.

*Format:*

The Research Proposal is similar in its content and outline to a F31 proposal. Thus, it will include a brief background, define the aims/objectives and hypotheses, and a brief description of the planned experiments with a summary of the methods (no details are required). This proposal is presented during the first Advisory Committee meeting for approval by the committee.

The Progress Report is similar in its content and outline as the Research Proposal, but with updated results and plans.

There is no restriction to the length of the reports, but typically consists of 4-6 pages and all written materials should be concise. Figures are not required, but may be included. Figures should be in near publication quality and have figure legends. Drafts of manuscripts can be attached to the progress reports to provide detailed information of completed projects and solicit feedback on the manuscript. These manuscripts will form chapters in the thesis (see Thesis Format).

*Overview of Student’s Academic Activities:*

In addition to the research progress, the student will also inform the advisory committee about academic activities, including courses, conference attendance, publications, and professional development activities. This information will allow the advisory committee members to provide career advice as well as monitor academic progress. An updated Student Progress Form will be used for this; this is the same form used for the twice-annual meetings with the Program Director. The student will clearly highlight the new entries since last advisory committee. Students are encouraged to discuss their IDP with the advisory committee, but this is not required.

*Examples:*

Contact the PIN Education Coordinator to view examples of Research proposals and Progress Reports.

*Time line:*

**Meeting #1: Research Proposal (before the end of the fall semester of third year)**

*Background of Project* - Provides a description of key findings leading to the creation of the hypothesis to be tested. Includes relevant references if applicable.

*Specific Aims/Objectives* - Define the objectives to be pursued, the rationale for the objectives selected.

*Experimental Designs* – For each Aim/objective briefly describe the experimental designs and methods that will be employed for each objective.

*Thesis Approval Form:* Make sure the thesis approval form is signed by all committee members.

### **Meeting #2: Progress Report** (*within 6 months after Meeting #1*)

The student will update the Research Proposal and add Progress obtained to date. For each of the Aims/Objectives, provide results, and/or status of the analysis (in progress, planned etc.). It is expected that research plans will change over the course of the thesis research. Therefore, the student will clearly indicate which research plans are new and provide the rationale for these new plans.

*Results* - Indicate progress on each of the objectives outlined in the research proposal. Write a brief description of the results obtained. Figures with figure legends for data generated may be included.

*Discussion* - State the conclusions that can be made from the work accomplished to date. Briefly explain how the results contribute to the overall problem to be studied ('Big Picture').

*Manuscripts in preparation or submitted and abstracts* must be appended as separate documents for consideration by the committee.

#### **All subsequent meetings:**

Update the Progress Report and clearly explain all planned experiments. Add the general outline of the chapters to be included in the thesis, indicating the structure of each of the research chapters.

## **IX. THESIS FORMAT**

### **A. OVERVIEW**

The thesis format will follow the guidelines set by the SGSHS ([https://www.umc.edu/grad\\_forms/](https://www.umc.edu/grad_forms/)), which allows for two formats.

1. Article-style thesis/dissertation format, which is intended for doctoral students whose final, completed dissertation will consist of a number of manuscripts or published articles. This may include articles already published in, submitted to, or to be submitted to peer-reviewed journals. In addition, it may include data from studies conducted during the candidacy that are part of the thesis but not yet included in manuscripts either submitted or in preparation.

2. Traditional style thesis, which is intended for students whose thesis consists of a single set of studies, or a single monograph.

The Program in Neuroscience expects that students will have multiple studies and publications deriving from their PhD thesis. Accordingly, the Article-style thesis format is recommended. Note that previously published articles to be included in the thesis should be formatted according to the standard outlined by the graduate school (see below)

## **B. THESIS OUTLINE**

### ***Thesis Outline (Article-style format):***

- I. Title Page (see link above for examples)
- II. Signature Page
- III. Abstract
- IV. Dedication (optional)
- V. Acknowledgements (optional)
- VI. Table of Contents
- VII. List of Tables (see Note 1)
- VIII. List of Figures (see Note 1)
- IX. Introduction and Review of Literature (see Note 2)
  - a. Literature cited in Introduction and Literature Review (see Note 3)
- X. Research Chapters: Each chapter containing:
  - a. Title page including authors contribution statement (see Note 4)
  - b. Introduction (see Note 5)
  - c. Materials and Methods (see Note 6)
  - d. Results: (see Note 7)
  - e. Discussion (see Note 8)
  - f. Literature cited (see Note 3)
  - g. Figure captions
  - h. Tables and Figures
- XI. Overall Summary and Discussion (see Note 9)
  - a. Literature cited in Discussion (see Note 3)

### **Notes:**

1. Lists should be according to Chapter, using a 1.1,1.2...to n.1,n.2 format)
2. This section will describe the overall hypothesis or question, the studies and sub-hypotheses or questions, and explain their significance. It will contain an extensive review of relevant background literature to describe the broader context and introduce main concepts and hypotheses or research questions.
3. All citations will be formatted identically throughout the dissertation, including Introduction and Literature Review, all chapters, and Summary and Discussion. Set your citations manager to use Journal of Neuroscience style for this section and throughout the thesis. See the following for guidelines

<http://www.jneurosci.org/site/misc/itoa.xhtml>

4. Since manuscripts may contain multiple authors and include data not collected by the student, the contributions of each individual author will be stated on the title page of each research chapter.
5. The typical journal introduction; usually a word limit set by the journal and not including a very broad literature review background.
6. Material and Methods: only for that particular chapter
7. Results: only for that particular chapter
8. Discussion: only for that particular chapter
9. In the overall summary and discussion, the student will describe how the studies fit together and test the overall hypothesis or address the overall question. Future directions may be identified.

All formatting including fonts, margins, etc., are consistent throughout the dissertation and adhere to SGSHS guidelines. Complete guidelines and formatting tips can be found on the SGSHS website. ([https://www.umc.edu/grad\\_forms/](https://www.umc.edu/grad_forms/))

It is the student's and research mentor's responsibility to strictly adhere to the formatting guidelines.

## **X. THESIS DEFENSE/EXAM FORMAT**

### **A. PROCEDURE FOR DISSERTATION DEFENSE**

The student will present their thesis research in a public, seminar-style setting. After a short period of questions from the public audience, the public portion of the defense is concluded. The student will be asked by the examiners to leave the room for a short period of time. During this time, the examiners, comprised of the members of the advisory committee (VII.A, above), will share their impressions and determine the order of questioning.

The student is then invited back into the room and the exam begins. The exam will typically last for 1.5-2 hours, and consist of one or two rounds of questions from the examiners.

The executive committee member who serves as the chair will take notes throughout the exam and keep track of the time.

After completion of the questioning, the student is again asked to leave the room, while the examiners reach their decision and recommendations.

Finally, the student is invited back into the room and the chair will convey the exam committee's decisions to the student in the presence of all examiners.

The research mentor will oversee any revisions required by the examiners.

## **XI. PROGRAM GOVERNANCE AND COMMITTEES**

### **A. OVERVIEW**

The Graduate Program in Neuroscience is an interdepartmental research training program whose activities are dependent on the voluntary participation of faculty from participating departments in model of shared governance. The following is a list of current committees and administrative roles in Program:

### **B. PROGRAM STRUCTURE**

*UMMC Neuroscience Institute* – The Operating Board of the Neuroscience Institute is the oversight body for the Program, and is comprised of the Chairs of the Departments of Neurobiology & Anatomical Sciences, Psychiatry & Human Behavior, Neurology, and Neurosurgery. Along with the Dean of the SGSHS, the charge of this group includes budgetary approval and oversight, selection and review of the Program Director, and long-range programmatic planning, the latter in the context of the larger scale development of neuroscience research, education and clinical services at UMMC.

*Director* – The Director is responsible for providing oversight for all aspects of the operation of the Graduate Program, the progress of students and all program activities. The Program Director reports to the Board of Directors and the Graduate School, chairs the Executive Committee, and works with the Associate Director and Executive Committee to develop the curriculum, oversee recruitment and admission of students, support the credentialing of faculty, and oversee other program events. The Director will serve as the primary program representative on the SGSHS Graduate Council and other committees as needed. The Director is appointed by the Board of Directors for a fixed term of 3-5 years.

*Associate Director* – The Associate Director has responsibility for all aspects of student recruitment and the annual admissions process, including the preparation of recruitment materials, organization of on-site and off-site recruitment events, the interview and selection process, and communications with applicants and faculty related to admissions. As noted above, the Associate Director serves as a member of the Executive Committee, and as Chair of a Recruitment and Admissions Subcommittee comprised of EC members and other PIN faculty. In addition, the Associate Director serves as an alternate representative for the Program on the SGSHS Graduate Council and other committees as needed. The Associate Director is appointed by the Steering Committee for a 3 year term.

*Executive Committee* – The Executive Committee (EC), chaired by the Director, will be responsible for operations of the program, including its curriculum, recruitment and admissions, student guidance, and mentoring and career development support. The EC is comprised of 5 elected members: two representatives each from the Departments

of Psychiatry & Human Behavior and Neurobiology & Anatomical Sciences and one at large representative drawn from the other participating departments. Of these 5 members, one will serve as the Associate Director. EC members are elected by majority vote of the faculty from a slate of candidates, which are reviewed and approved by the Board of Directors prior to the election. Subcommittees may be developed to assist the EC in its duties. In addition to the 5 elected members, the EC includes the Director as a voting member, and a student representative as a non-voting member. The EC meets at least monthly; motions require a simple majority to carry, but changes in Program policies or training goals must also be approved by the Board of Directors.

*Recruitment/Admissions Committee* – The Recruitment/Admissions Committee is chaired by the Associate Director, and is responsible for reviewing application materials from prospective students, interviewing prospective students, participating in recruitment events, and providing recommendations for admission offers to the Executive committee. Members are invited to join by the Director and Associate Director, and serve a 2-year term.

*Curriculum Committee* – The Curriculum Committee is chaired by the Director and provides oversight of the program curriculum. The Committee is responsible for evaluation and modification of existing courses, and developing new course offering/program activities to augment training in scientific knowledge, research skills, communication skills, professionalism and other core competencies. Members of the Curriculum Committee are invited to join by the Director, and serve a 2-year term.

*Program Education Coordinator* – The Program Education Coordinator provides administrative support to students, Course Directors, Program Director, Associate Director, and Executive Committee, and assists in the preparation of periodic reports to Steering Committee, SGSHS and other bodies.

## **XII. TEACHING**

### **A. TRAINING IN TEACHING**

Teaching skills are an essential core competency to be acquired by all graduate students. Therefore, it is recommended that student's elect to participate in the opportunities listed below. In addition, it is recommended that a student partake in teaching courses and opportunities in the 3<sup>rd</sup> and 4<sup>th</sup> years in consultation with the research mentor and advisory committee.

#### *ID 715 and ID 716: Teachers in Training*

SGSHS has established a program for students to participate in a teaching practicum, in collaboration with the School of Health Related Professions as well as area community colleges and universities. The PhD student is mentored to provide lectures in the areas of self-identified expertise (i.e. neuroscience). The Teachers in Training Program allows participants to experience mentorship, observation, and teaching in an undergraduate classroom at neighboring institutions or universities. This opportunity will offer selected participants the ability to gain an enhanced level of teaching experience, mentoring, and

observation designed to increase professional development and preparation for a career in higher education. This is a chance for graduate students who are interested in teaching as a career to experience university teaching with a mentor-teacher.

The student will first register for ID 715, Teaching in Higher Education (3 hours credit) and meet once per week with a mentor to refine teaching technique and presentation materials. Participants receive instruction on the basics of learning styles, teaching philosophies, course development, and assessment in addition to teaching and learning techniques.

Students then register for ID 716, Teaching Practicum (1 hour credit). After the student receives his/her teaching assignment and teacher mentor, the teaching mentor will observe the student for one class period; provide feedback and guidance then do a formal evaluation culminating in a course grade.

#### *ANAT 615: Medical Neurobiology*

This first year medical student course includes study of the human nervous systems using lecture presentations, clinical correlations and laboratory material/demonstrations with case diagnosis. Teaching opportunities are available. For information, contact the Program Director.

### **XIII. LEAVE POLICIES**

All leave requests should be discussed and approved by the Program Director prior to the Graduate Assistant-Stipend student taking leave time. Stipend payments and insurance coverage will continue while the Graduate Assistant-Stipend student is on approved sick, vacation, or parental leave. Sick, vacation, and parental leave days do not accrue from year to year.

#### **A. SICK LEAVE**

A Graduate Assistant-Stipend student may be granted up to 15 days of sick leave per calendar year or prorated based on the stipend start date as listed below:

- January – March--15 days of sick leave.
- April – June--12 days of sick leave.
- July – September--8 days of sick leave.
- October – December--4 days of sick leave.

#### **B. VACATION LEAVE**

A Graduate Assistant-Stipend student will receive stipend payment for all UMMC approved holidays. In addition, they may be granted up to 15 days of vacation per calendar year or prorated based on the stipend start date as listed below:

- January – March--15 days of vacation leave.
- April – June--12 days of vacation leave.

- July – September--8 days of vacation leave.
- October – December--4 days of vacation leave.

### **C. PARENTAL LEAVE**

A Graduate Assistant-Stipend student may be granted up to 30 calendar days of parental leave per year for the adoption or birth of a child. Either parent is eligible for parental leave. They may request to use any residual sick or vacation time to extend the period of paid leave.

### **D. LEAVE OF ABSENCE**

A leave of absence is generally granted to students in good academic standing with the university and approved by the Program Director and Dean of the Graduate School. For students in good academic standing, a leave of absence is generally approved for no more than one academic semester for personal, financial or medical reasons. For students not in good academic standing, i.e., those whose GPA is less than 3.0 or whose research efforts/results are not satisfactory, leaves of absence will be given at the discretion of the Program Director and Dean of the Graduate School. Such students will be permitted the option of withdrawal. Stipend payment is suspended during a leave of absence.

A Graduate Assistant-Stipend student is required to be actively enrolled and covered by the student health insurance plan for a minimum of three months prior to the beginning of a leave of absence. If the Graduate Assistant-Stipend student is allowed to take a leave of absence, the school will continue to pay for health insurance for up to two months. If additional leave of absence is required after the two month period, health insurance will be terminated unless the student applies for the continuation of coverage through the Office of Student Accounting. This continuation of coverage will be at the student's expense.

## **XIV. HEALTH AND WELLNESS**

### **A. STUDENT ASSISTANCE PROGRAM**

Stress is a fact of life and there may be times that a student needs additional support and guidance to come up with answers and practical solutions. In recognition, UMMC has an outstanding Student and Employee Assistance Program; called LifeSynch. This service is available at any time on any day, and maintains strict confidentiality.

Further information can be found on this website:

[https://www.umc.edu/Administration/Business\\_Services/Human\\_Resources/Employee\\_Benefits/Employee\\_Assistance\\_Program.aspx](https://www.umc.edu/Administration/Business_Services/Human_Resources/Employee_Benefits/Employee_Assistance_Program.aspx)

Phone number: (866) 219-1232

And brochures can be found in the SGSHS entrance office.

## **B. STUDENT FITNESS**

The Fitness Center is a facility dedicated to the promotion of healthy attitudes and lifestyles among future health care professionals. It offers students and residents a wide variety of fitness resources, including controlled weight machines, free weights, treadmills, bikes, steppers, aerobic studio, basketball/volleyball court and jogging track.

In addition, the Fitness Center offers towel and locker service, showers, equipment checkout and supports the UMMC recreational sports programs.

Courthouse Racquet and Fitness owned by UMMC has four locations. The wellness centers are located in Madison, Brandon, Flowood (Lakeland Dr.) and Northeast Jackson. The Courthouse services and amenities include: aquatics, childcare, personal training, strength training, tennis, cardio, group exercise, racquet, and supplements. All UMMC students and employees are offered membership at a discounted price.

For more information visit <http://mscourthouse.com>, or to join University Wellness Centers call 601-948-8688 or email [cbaker@ummcwellness.com](mailto:cbaker@ummcwellness.com).

## **C. STUDENT RECREATION**

The Recreation Center is located on the first floor of the Norman C. Nelson Student Union. It features a ping pong table, foosball table, video games, 2 pocket billiard tables, 2 large screen TVs, kitchenette, locker service, and most importantly, a relaxed atmosphere. The Recreation Center is open to all UMMC students and residents seven days a week.