

WAKE FOREST UNIVERSITY

The Graduate School of Arts and Sciences, Biomedical Sciences

Molecular Medicine and
Translational Science
Ph.D. Program
Policies & Procedures

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CHOOSING A THESIS LABORATORY

1. SCOPE

- 1.1. The purpose of this policy is to establish a process for prospective Molecular Medicine and Translational Science Ph.D. program students in Track 4 to follow in making the decision on the best laboratory in which to conduct his/her dissertation research. This policy will follow the Track 4 policies and encourage dialog among the graduate student, a potential mentor, the Molecular and Cellular Biosciences (MCB) Track Director, and the Molecular Medicine and Translational Science (MMTS) Ph.D. Program Directors with regard to which lab is the best fit for the student
- 1.2. M.D./Ph.D. students should follow the policies for laboratory rotations described by the M.D./Ph.D. program.

2. POLICY

- 2.1. The student should meet and talk in general terms with the mentor of the lab(s) she/he wishes to work in, but without commitment. The following criteria are suggested when considering a lab for thesis work and should be discussed with the Principal Investigator of the lab(s) being considered.

2.1.1. Is there space in the PIs lab to accommodate a graduate student?

2.1.2. Does this PI have funding to support a graduate student?

2.1.3. Is there a project in this lab on which a graduate student could conduct dissertation research?

The student should also ask for a description of possible projects.

- 2.2. Once the MCB Track Director has the student preferences, the Track Director will contact the potential mentors to determine if the mentor is truly interested in the student and if the mentor can support the stipend of the student. If the answer is yes on the part of the mentor, the Track Director will then notify the student to meet with the mentor and begin to plan the dissertation research.
- 2.3. Once the student has the above information and has decided to enter the MMTS program, he/she must meet with the MMTS Program Directors to discuss the student's long-term goals and the relative pluses and minuses of the lab choices for those long-term goals.
- 2.4. In the unlikely event that none of the rotation mentors is a possible choice for the student, then the student can do a 4th summer rotation with another MCB faculty mentor.

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MMTS Ph.D. CURRICULUM AND PROGRAM REQUIREMENTS (FOR STUDENTS ENTERING FROM TRACK 4, MOLECULAR AND CELLULAR BIOSCIENCES)

1. SCOPE

1.1. This policy summarizes the current curricular and program requirements for students who enter the Molecular Medicine and Translational Science program from Track 4, Molecular and Cellular Biosciences, in order to obtain the PhD degree.

2. POLICY

2.1. YEAR ONE (Fall, Spring, Summer), as a Molecular and Cellular Biosciences (MCB) student:

- 2.1.1. Take the MCB curriculum in fall and spring and include Foundations of Translational Science (MCB 752) as the second elective.
- 2.1.2. Choose the MMTS program and advisor by the end of the spring term.
- 2.1.3. Take Research (MMTS 791) in the summer term and choose Clinical Mentor during summer semester.

2.2. YEAR TWO (Fall, Spring, Summer), as a MMTS student:

- 2.2.1. Take Translational Science Seminar (MMTS 711), Statistics (choice of CPTS 730, HES 721, IPP 741-cross listed NEUR 741), Research (MMTS 791), Clinical Experience (MMTS 715), and any electives in the fall term.
- 2.2.2. Take Translational Science Seminar (MMTS 712), Scientific Development and the Business of Science (MMTS 724), Research (MMTS 792), Clinical Experience (MMTS 716), and any electives in the spring term. Electives are not required and are at the discretion of the student and his/her advisory committee
- 2.2.3. Take MCB 752. Foundations of Translational Science in the spring term, if this was not taken in year one.
- 2.2.4. Take Research (MMTS 791) and prepare for Preliminary Exam in summer term.
- 2.2.5. Choose a Research Advisory Committee by the end of Year Two, which will usually serve as the student's Preliminary Examination Committee and Final Examination Committee. The preliminary committee must contain dual mentorship with both M.D.s and Ph.D.s with at least four (4) members. The structure and composition of the committee should be agreed upon by the student and primary mentor. The chair of the preliminary committee does not have to be outside of the institute (Wake Forest Institute of Regenerative Medicine)/Center/department/section as the mentor. The thesis committee should consist of at least five (5) members and faculty composition should follow the guidelines provided in the Bulletin of the Graduate School of Arts and Sciences. The thesis committee chair cannot have a primary appointment in the same Institute (WFIRM)/Center/Department/Section as the mentor. All members of the examining committee must be on the Graduate School faculty. Faculty from outside institutions may be appointed to the committee with approval by the thesis advisor and the Dean of the Graduate School. In some instances, faculty members may be added to the Research Advisory Committee to provide expert advice on experimental design and approaches, but not all members of the Research Advisory Committee are required to participate in the Preliminary Examination (for MMTS this will be 4 members minimum) or the Final Dissertation Defense (5 member minimum), as long as the minimal standards of the graduate school requirements are met.
- 2.2.6. Students are encouraged to participate in a Journal Club that matches their research interests.

2.3. YEAR THREE AND BEYOND, as a MMTS student:

- 2.3.1. Take Translational Science Seminar (MMTS 711, 712) and Research (MMTS 791, 792) each fall and spring semester; take Research (MMTS 791) in the summer term.
- 2.3.2. Take the preliminary examination by September 1st at the beginning of the third year [end of the second year]. Follow MMTS policies in this manual and the policies of the graduate school (see Wake Forest University Graduate School of Arts and Sciences Bulletin) for taking the exam.
- 2.3.3. Register for “Thesis Only” the final semester before graduation.
- 2.3.4. If a student changes laboratories and mentors after a successful preliminary examination, then a new Research Advisory Committee will be formed and the student will provide them with a written Specific Aims page for the new project prior to their first new committee meeting. A new preliminary examination is not required
- 2.3.5. Follow graduate school guidelines (see Wake Forest University Graduate School of Arts and Sciences Bulletin) for preparation of dissertation and final defense of dissertation.
- 2.3.6. Students are required to publish at least one first author manuscript based on their dissertation research prior to graduation (see Publication Requirement for Ph.D. degree in this Manual).
- 2.3.7. Students are encouraged to participate in a Journal Club that matches their research interests.

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MMTS M.S. CURRICULUM AND PROGRAM REQUIREMENTS (FOR STUDENTS WHO ENTER THE PROGRAM WITH THE M.D., D.V.M. or D.O. DEGREE)

1. SCOPE

- 1.1. This policy summarizes the current curricular and program requirements that students who have the M.D., D.V.M. or D.O. degree must complete in order to obtain the M.S. degree in Molecular Medicine and Translational Science.

A Master's degree in Biomedical Sciences is also available to non-physicians through the Wake Forest Graduate School. <http://graduate.wfu.edu/admissions/BMSC.html>

2. POLICY

2.1. YEAR ONE (Fall, Spring, Summer):

- 2.1.1. **Select a thesis research mentor.** Students should choose a thesis research mentor and a research project before entering the MMTS M.S. program and must be able to devote at least 75% of their faculty, residency or fellowship effort to research. The choice of mentor must be approved by the Co-Directors of the MMTS graduate program.
- 2.1.2. Take MCB 700 (Analytical Skills) in the 2 weeks preceding the fall semester.
- 2.1.3. Take MCB 701/702 (Molecular and Cellular Biosciences) in the fall and spring semesters.
- 2.1.4. Take an Ethics course in the fall and spring semesters (choice of CPTS 703/704 or GRAD 713/714).
- 2.1.5. Take MMTS 711/712 (Translational Science Seminar) in the fall and spring semesters.
- 2.1.6. Take MMTS 724 (Scientific Development and the Business of Science) in the spring semester.
- 2.1.7. Choose electives in the fall and spring semesters. The Graduate School of Arts and Sciences requires completion of at least 24 hours of didactic coursework (not Research) for the MS degree.
- 2.1.8. Take MMTS 791/792 (Research) in the fall, spring, and summer semesters.
- 2.1.9. **Choose an advisory committee.** In consultation with the mentor and the Co-Directors of the MMTS graduate program, a faculty advisory committee should be appointed during the first year in the program, following the guidelines for committee composition stated in the Bulletin of the Graduate School of Arts and Sciences. MS advisory committees should consist of four (4) faculty members.

Students are encouraged to participate in a Journal Club that matches their research interests.

2.2. YEAR TWO:

- 2.2.1. Take Translational Science Seminar (MMTS 711/712) in the fall and spring semesters.
- 2.2.2. Take Research (MMTS 791/792) in the fall, spring and summer semesters.
- 2.2.3. Take a course in statistics (choice of CPTS 730, HES 721, IPP 741) in the fall semester.
- 2.2.4. Take any needed electives in the fall and spring semesters.
- 2.2.6. Prepare thesis/dissertation and take final examination, following the guidelines described in the Bulletin of the Graduate School of Arts and Sciences. The goal is for M.S. students to defend their thesis prior to the end date of the funding support.
- 2.2.7. M.S. students are encouraged to publish at least one manuscript based on their thesis research.
- 2.2.3. Students are encouraged to participate in a Journal Club that matches their research interests.

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MMTS Ph.D. CURRICULUM AND PROGRAM REQUIREMENTS (FOR STUDENTS WHO ENTER THE PROGRAM WITH THE M.D., D.V.M. or D.O. DEGREE)

1. SCOPE

- 1.1. This policy summarizes the current curricular and program requirements that students who have the M.D., D.V.M. or D.O. degree must complete in order to obtain the Ph.D. degree in Molecular Medicine and Translational Science. Based on the advanced degree, a M.D., D.V.M., or D.O. will enter as a MMTS second (2nd) year PhD student.

A Master's degree in Biomedical Sciences is also available to non-physicians through the Wake Forest Graduate School. <http://graduate.wfu.edu/admissions/BMSC.html>

2. POLICY

2.1. YEAR TWO (Fall, Spring, Summer):

- 2.1.1. **Select a thesis research mentor.** Students should choose a thesis research mentor and a research project before entering the MMTS Ph.D. program and must be able to devote at least 75% of their faculty, residency or fellowship effort to research. The choice of mentor must be approved by the Co-Directors of the MMTS graduate program.
- 2.1.2. Take MCB 700 (Analytical Skills) in the 2 weeks preceding the fall semester.
- 2.1.3. Take a course in statistics (choice of CPTS 730, HES 721, IPP 741) in the fall semester.
- 2.1.4. Take an Ethics course in the fall and spring semesters (choice of CPTS 703/704 or GRAD 713/714).
- 2.1.5. Take MMTS 711/712 (Translational Science Seminar) in the fall and spring semesters.
- 2.1.6. Take MMTS 724 (Scientific Development and the Business of Science) in the spring semester.
- 2.1.7. Choose electives in the fall and spring semesters. There are no minimum hours of didactic coursework required for completion of the Ph.D. degree.
- 2.1.8. Take MMTS 791/792 (Research) in the fall, spring, and summer semesters.
- 2.1.9. **Choose an advisory committee.** In consultation with the mentor and the Co-Directors of the MMTS graduate program, a faculty advisory committee should be appointed during the second year, following the guidelines for committee composition stated in the Bulletin of the Graduate School of Arts and Sciences. Ph.D. advisory committees should consist of at least five (5) faculty members.

Exemption: The course, Introduction to Professional Development in the Biomedical Sciences which is taken during the first year, is not required. Students are encouraged to review the Bulletin of Wake Forest University and look at the individual units to select sections of the courses to bolster their background that are appropriate for their research. These would be taken as electives.

Students are encouraged to participate in a Journal Club that matches their research interests

2.2. YEAR THREE AND BEYOND:

- 2.2.1. Take Translational Science Seminar (MMTS 711/712) in the fall and spring semesters.
- 2.2.2. Take Research (MMTS 791/792) in the fall, spring and summer semesters.
- 2.2.3. Take any needed electives in the fall and spring semesters.
- 2.2.4. Ph.D. students take the preliminary exam by September 1st at the beginning of the third year [end of the second year] (refer to the preliminary exam description in this Manual).
- 2.2.5. Register for "Thesis Only" in the final semester before graduation.

- 2.2.6. Prepare thesis/dissertation and take final examination, following the guidelines described in the Bulletin of the Graduate School of Arts and Sciences. Completion of the Ph.D. degree should be in 3-5 years.
- 2.2.7. Ph.D. students are required to publish at least one first author manuscript based on their dissertation research (see Publication Requirement for Ph.D. degree in this Manual).

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MMTS Ph.D. CURRICULUM (FOR STUDENTS IN THE COMBINED M.D./Ph.D PROGRAM)

1. SCOPE

- 1.1. This policy summarizes the current curricular and program requirements that students who are in the combined M.D./Ph.D. program must complete in order to obtain the Ph.D. degree in Molecular Medicine and Translational Science.

2. POLICY

2.1. YEARS ONE AND TWO:

- 2.1.1. Perform two lab/research rotations – one in the summer before the Year I of the medical curriculum and one in the summer between Years I and II.
- 2.1.2. Complete Years I and II of medical school curriculum.
- 2.1.3. Select a dissertation research mentor before the end of Year II, following the guidelines in the “Choosing a Thesis Laboratory” policy (this Manual).
- 2.1.4. Complete first clinical rotation of Year III of medical school (3 months).

2.2. YEAR THREE (Fall, Spring, Summer):

- 2.2.1. Take MCB 700 (Analytical Skills) in the 2 weeks preceding the fall semester.
- 2.2.2. Take a course in Statistics (choice of CPTS 730, HES 721, IPP 741) in the fall semester.
- 2.2.3. Take an Ethics course in the fall and spring semesters (choice of CPTS 703/704 or GRAD 713/714).
- 2.2.4. Take MMTS 711/712 (Translational Science Seminar) in the fall and spring semesters.
- 2.2.5. Take MMTS 724 (Scientific Development and the Business of Science) in the spring semester.
- 2.2.6. Choose electives in the fall and spring semesters. Electives supportive of the research proposal are highly recommended.
- 2.2.7. Take MMTS 791/792 (Research) in the fall, spring, and summer semesters.
- 2.2.8. Choose an advisory committee by the end of Year Three, which will serve as the student’s Preliminary Examination Committee and Final Examination Committee. The preliminary committee must contain dual mentorship with both M.D.s and Ph.D.s. with at least four (4) members. The structure and composition of the committee should be agreed upon by the student and primary mentor. The chair of the preliminary committee does not have to be outside of the institute (Wake Forest Institute of Regenerative Medicine)/Center/department/section as the mentor. The thesis committee should consist of at least five (5) members and faculty composition should follow the guidelines provided in the Bulletin of the Graduate School of Arts and Sciences. The thesis committee chair cannot have a primary appointment in the same Institute (WFIRM)/Center/Department/Section as the mentor. All members of the examining committee must be on the Graduate School faculty. Faculty from outside institutions may be appointed to the committee with approval by the thesis advisor and the Dean of the Graduate School.
- 2.2.9. Students are encouraged to participate in a Journal Club that matches their research interests.

2.3. YEARS FOUR AND FIVE:

- 2.3.1. Take Translational Science Seminar (MMTS 711, 712) and Research (MMTS 791, 792) each fall and spring semester; take Research (MMTS 791) in the summer term.
- 2.3.2. Take the preliminary examination as soon as possible during Year Four. Follow MMTS policies in this manual and the policies of the graduate school (see Wake Forest University Graduate School of Arts and Sciences Bulletin) for taking the exam.
- 2.3.3. Register for “Thesis Only” the final semester before graduation.

- 2.3.4. Follow graduate school guidelines (see Wake Forest University Graduate School of Arts and Sciences Bulletin) for preparation of dissertation and final defense of dissertation.
- 2.3.5. Students are required to publish at least one first author manuscript based on their dissertation research prior to graduation (see Publication Requirement for Ph.D. degree in this Manual).
- 2.3.6. If needed, students may continue their research during Years III and IV of the medical school curriculum, but are highly encouraged to complete their project and defend their dissertation before returning to medical school.

2.4. YEARS SIX AND SEVEN:

- 1. Complete Years III and IV of the medical school curriculum, typically entering Year III in the spring.

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MOLECULAR AND CELLULAR BIOSCIENCES, (TRACK 4) MASTERS STUDENTS TRANSITIONING TO MMTS Ph.D. PROGRAM

1. SCOPE

- 1.1. This policy summarizes the program requirements for M.S. students who enter the Molecular Medicine and Translational Science program from Track 4, Molecular and Cellular Biosciences (MCB), in order to obtain the PhD degree.

2. POLICY

2.1. Biomedical Science Students who would like to remain in the lab in which they are doing their masters work:

- 2.1.1. If the PI is agreeable to the student doing their PhD thesis work in the lab and can supply stipend support, the student will complete their master's degree, MCB core course requirements and apply to the Graduate School for acceptance. MD or DVM student is not required to complete master's degree which is based on their advanced degree but must obtain approval from the graduate school. MCB will make a decision for acceptance in consultation with the program that the student would be entering. For acceptance, both MCB and the program must grant approval. Acceptance into the Molecular Medicine and Translational Science Program will be made by the MMTS Executive Committee.
- 2.1.2 Students who complete their masters work in either December or May can enter the PhD program "off-cycle" in the spring semester or summer session.
- 2.1.3 In addition to the online application to the WF Graduate School, students must submit to the Graduate Committee a transcript of course work taken at WFSM. The student will request a letter of support from the faculty mentor that includes a statement of commitment for financial support during the doctoral training period. A letter from the thesis committee chair must also be included that describes the student's performance during their Masters work and supports entry into the PhD program. The student will submit a new personal statement of research interest which will feature a description of their MS work and how this will be continued during the PhD studies.
- 2.1.4. If a student is accepted into the PhD program, and has already completed the core course requirements, the student will be required to complete the MMTS curriculum and complete their Preliminary Exam within 12 months of entering the program (refer to Preliminary Examination for Admission to PhD. Candidacy). The student will be exempt from laboratory rotations. Students will also fulfill requirements of PhD candidates such as MMTS Seminar presentations and committee meetings as recommended by their Advisory Committee.

2.2. Students who would like to do their PhD work in a laboratory other than their masters work lab:

- 2.2.1. These student would apply to the track through the same process as all other applicants and be considered with the overall applicant pool for the next entering class (fall admission only). They would do three rotations their first year and work toward completion of all other requirements. The coursework will be decided on a case-by-case basis depending on the prior classes and reviewed by the curriculum committee with final approval by the MMTS executive committee.

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MOLECULAR MEDICINE AND TRANSLATIONAL SCIENCE GRADUATE STUDENT ANNUAL RESEARCH PROGRESS EVALUATION

1. SCOPE

The purpose of this policy is to establish a mechanism for obtaining a periodic evaluation of the Molecular Medicine and Translational Science graduate student research progress by the graduate program director(s), the graduate student dissertation committee and the graduate student research/thesis mentor. The policy applies to all students in the MMTS program.

2. POLICY

2.1. Student progress will be reviewed periodically by one or more of the following: the graduate program director(s), the student's thesis mentor and the student's preliminary exam/dissertation committee. A critical part of the program director evaluation will be the student's CV. The student evaluation includes:

2.1.1. Student CV/Biosketch

2.1.2. MMTS Form A, Part 1 and MMTS Form B

2.1.3. Wake Forest University Graduate School of Arts and Science Student Laboratory Research Assessment Form

2.2. This *Curriculum Vitae* is the responsibility of the student and helps develop the skill of maintaining one's written evidence of progress. The CV should be maintained in hard copy as well as electronic copy. The hard copy will be housed in the student's office and brought to the optional annual meeting with the directors. An e-copy of Form A, Part 1; Form B and the student's CV/Biosketch will be maintained in the program's administrative office. The submission of the CV will be required only once a year and at the end of the spring semester. A recommended CV template can be found on <http://intranet.wakehealth.edu/Departments/Faculty-Affairs/Promotion-and-Tenure/> and will follow the format of the faculty of Wake Forest School of Medicine

2.3. The CV, combined with the student's grades and MMTS and Graduate School evaluation forms, provides a basis for letters of support from the student mentor and the program director(s) when seeking grant funding, and post-doctoral or other post-graduate positions.

3. The student evaluations will occur as follows:

3.1. Molecular Medicine and Translational Science students before appointment of a faculty advisory committee will be evaluated by the graduate program director(s). The student will provide a copy of the faculty evaluation (Graduate School Student Laboratory Research Assessment Form) from the laboratory that they have selected to conduct their thesis research. At the beginning of the summer semester, the student will provide a self-evaluation by completing only the areas indicated for the student to complete on **FORM A, Part 1: MMTS Ph.D. Program Student Progress Report** and then forward the form to their thesis mentor. Each student will complete an evaluation of their mentor by completing **FORM B: MMTS Program Student's Form for Evaluation of the Mentor** at the beginning of the summer semester. The student must forward all completed forms to Molecular Medicine and Translational Science administration. The student has the option of a face-to-face meeting with the graduate program director(s), or the graduate program director(s) has the option of requesting a meeting with the student. This meeting will be used to discuss the student CV, submitted at the end of the spring semester, and any questions about forming the student preliminary examination committee/committee chair selection and a tentative preliminary defense date and their plans for the coming year.

- 3.2. Molecular Medicine and Translational Science students after appointment of a faculty advisory committee will be evaluated on an annual basis by the graduate program director(s). The faculty advisory committee will provide an evaluation at the annual advisory committee meeting. The student's thesis mentor will provide an evaluation of the student's progress at the end of the spring semester, summer session, and fall semester by completing the Graduate School Student Laboratory Research Assessment Form and then forward completed form to MMTS administration for review by the MMTS Program Director(s). A student's CV will be submitted only once a year and at the end of the spring semester when the Graduate School Student Laboratory Research Assessment Form is submitted for the spring semester. At the beginning of the summer semester each year, the student will provide a self-evaluation by completing only the areas indicated for the student to complete on **FORM A, Part 1: MMTS Program Student Progress Report** and then forward the form to their thesis mentor. Each student will complete an evaluation of their mentor by completing **FORM B: MMTS Program Student's Form for Evaluation of the Mentor**. During the summer semester, the student has the option of a face-to-face meeting with the graduate program director(s) or the graduate program director(s) has the option of requesting a meeting with the student. This meeting will be used to discuss the student CV (which was submitted at the end of the spring semester) and their plans for the coming year.
- 3.3. Prior to the preliminary examination or prior to the annual committee meeting, the student will provide a self-evaluation by completing the areas indicated for the student to complete on **FORM A, Part 1: MMTS Program Student Progress Report** and then provide the form to the advisory committee chair. The advisory committee chair, in conjunction with the committee, will complete the areas indicated on **FORM A, Part 2: MMTS Program Student Progress Report** immediately following the preliminary examination or the annual committee meeting and forward it to the student, mentor, and the Molecular Medicine and Translational Science administration. The student must forward all completed forms to Molecular Medicine and Translational Science administration.
- 3.4. Post School Follow-up evaluation
- 3.4.1. The Molecular Medicine and Translational Science graduate program administration will request a biosketch or CV from MMTS graduates on an annual basis during the summer semester.

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SUMMARY OF THE MMTS GRADUATE STUDENT RESEARCH PROGRESS EVALUATION FORMS

Upon completion, all forms should be electronically forwarded to Molecular Medicine & Translational Science (MMTS) Graduate Program Administration. If electronic transmission of the forms is not possible, hard copies should be forwarded to MMTS Graduate Program Administration, 3rd floor, North Tower.

| Who is being evaluated? | When does the evaluation occur? | Which form to complete for the evaluation? | Who completes the evaluation form? |
|--|--|--|--|
| MMTS grad student | At the beginning of the summer semester each year. | FORM A-Part 1 MMTS Program Student Progress Report | The MMTS grad student will complete the FORM A-PART 1 and then forward it to their mentor and MMTS Graduate Program Administration. |
| MMTS grad student at the time of the preliminary examination meeting or annual advisory committee meeting. | FORM A-PART 1: Student section: at the time of the <u>preliminary examination</u> or the <u>annual advisory committee meeting</u> , FORM A-PART 2 Committee Chair section: immediately following the <u>preliminary examination</u> or at the <u>annual advisory committee meeting</u> . | FORM A-PART 1 MMTS Program Student Progress Report FORM A-PART 2 Chair of advisory committee | The MMTS grad student will complete FORM A PART 1 and then forward the entire form to their advisory/thesis committee chair to complete FORM A-PART 2 in conjunction with the committee. The completed forms will be forwarded to the student, the mentor and to MMTS Graduate Program Administration. |
| MMTS grad student mentor | At the beginning of the summer semester of each year. | FORM B-MMTS PhD Program Student's Form for Evaluation of the Mentor | The MMTS grad student will complete FORM B and then forward to MMTS Graduate Program Administration. |
| MMTS grad student | Graduate School Student Research Evaluation Form to be provided to students at the beginning of the semester and reviewed with research mentor to determine expectations for the semester. Students are required to make certain that their advisor completes form by the last day of final exams at the end of Spring semester, Summer session and Fall semester. | Wake Forest University Graduate School of Arts & Sciences Student Laboratory Research Assessment Evaluation Form. The form can be found on the WFU Graduate School of Arts and Sciences website under Bowman Gray/Student Forms http://graduate.wfu.edu/students/ . In addition to the <u>Graduate School form, a Curriculum Vitae</u> will be submitted at the end of the spring semester only. | The MMTS student will initiate by completing the top portion of the form and the MMTS mentor will complete form prior to the last day of final exams at the end of each semester. Submit as typed electronic copy only. The Completed Form is to be forwarded to MMTS Graduate Program Administration and the MMTS program directors will review. The evaluation forms will be kept in the student's file. The CV is only requested once a year which will be at the end of the spring semester. |

FORM A: PART 1

MMTS Program Student Progress Report Form

PART 1 is the STUDENT SECTION

Reporting Date:

Mentor Name:

Chair of Dissertation Committee (leave blank if no committee has been appointed):

Dissertation Committee Members (leave blank if no committee has been appointed):

Student Name:

Number of years in MMTS program:

ACADEMIC PRODUCTIVITY (to be completed by the student)

Course Work (students should attach a copy of their most current transcript):

GPA _____

Has all required coursework been completed? Yes ____ No ____

If no, what is still required?

RESEARCH PRODUCTIVITY (to be completed by the student)

What presentations (local, national, international; poster or talk) has the student made? Please detail.

Has the student published (abstracts, full-length research articles, review articles)? Please list.

Has the student submitted or had any grants funded or received funding? Please list.

Has the student participated in the submission of a patent?

When is the student projected to complete the PhD degree?

(Annual Progress Report: Forward completed Part 1 of form to **Mentor** and **MMTS Graduate Program Administration**)

(Annual Committee meeting or Prelim: Forward completed Part 1 of form to **Committee Chair** to complete Part 2)

FORM A: PART 2 DISSERTATION COMMITTEE SECTION

To be filled out by Chair of the Committee

Please evaluate the student’s performance in the quality measures listed below, choosing only one point from each row (see attached for detailed description of grade rubric). Submit any confidential comments separately.

| | Unacceptable | Needs Improvement | Average | Above Average | Excellent | N/A |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Quality of work | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Effort/Work ethic | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Acquired knowledge | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ability to work independently | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Communication | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Creativity | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Maturity | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Laboratory skills | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please explain the assignment of “Unacceptable” or “Excellent” in a given quality category:

General comments (Chair and Committee):

Student Goals for the Future:

Evaluation (circle): S U **Student (circle):** I agree I do not agree with this evaluation

Signatures (signature by student does not signify agreement with evaluation):

Chair of Committee: _____ Date: _____

Student: _____ Date: _____

(Annual Committee meeting or Prelim: Committee chair to complete Part 2, in conjunction with committee, and forward form-Part 1 & 2- to **Student, Mentor and MMTS Graduate Program Administration**)

Grading Rubric for Research Evaluation

For students during research rotations, or prior to ascent to candidacy:

- 1) Unacceptable.** Denotes a serious deficiency that should be remediated. For example, an “Unacceptable” in Laboratory skills would indicate a deficiency that was identified during the semester but efforts by the student to remediate or rectify performance were unsuccessful. In new students an “Unacceptable” in a single quality category may not result in an “U”.
- 2) Needs Improvement.** Denotes a deficiency that was addressed, or is being addressed by the student. Three scores of “Needs Improvement” and below in quality categories would be a basis for assignment of a “U” for an inexperienced student. Ideally, feedback should be given by the advisor that expectations are not being met by mid-semester or mid-rotation to provide opportunity for remediation.
- 3) Average.** This would denote acceptable minimum performance. An “Average” would be the expected performance during early rotations.
- 4) Above average.** Denotes an “Above Average” level of performance. If assigned during early rotations, this should be justified by separate comment to provide positive feedback to students.
- 5) Excellent.** This score should be reserved for students that are high performers that show advanced skills in the quality categories. An “Excellent” should be ***reserved for students that would be considered among the top 10% of program students.*** This should be justified/acknowledged by separate comment.

For advanced students after ascent to candidacy:

- 1) Unacceptable.** Denotes a serious, unacceptable deficiency that may constitute a basis for an “Unacceptable”. Because normal deficiencies would be identified prior to ascent to candidacy, an “Unacceptable” would indicate misconduct or troublesome behavior, or a lack of aptitude in the quality category that would indicate that student may not be suitable for a research career. Two scores of “Needs Improvement” and below would be a basis for assignment of a “U”.
- 2) Needs Improvement.** Denotes a deficiency that if unaddressed may impact student career success.
- 3) Average.** This denotes acceptable minimum performance. After ascent to candidacy scores below “Average” should be followed up with strategy and goals for improvement using available mechanisms (e.g., individual development plan or committee meeting).
- 4) Above Average.** Should be noted and justified with separate comment. Advanced students should seek to have “Above Average” in one or more categories.
- 5) Excellent.** This score should be reserved for students that are high performers that show advanced skills in the quality categories. An “Excellent” should be ***reserved for students that would be considered among the top 10% of program students.***

FORM B

MMTS Program Student's Form for Evaluation of the Mentor

Mentor: _____ Date: _____

Student: _____

All students: Please evaluate your thesis mentor annually at the end of the spring semester and return the completed form to MMTS program administration

Responsibilities for Mentors

- Assist the student in developing a research project
- Guide the student in evaluation of the literature concerning the project
- Teach specific research techniques
- Help prepare student for oral presentation at the Translational Science Seminar Series and attend the presentation

1. How well has the thesis mentor explained the goals of the project?

Goals discussed with the student should include:

- The medical/biological problem
- The hypotheses to be tested
- The experimental approach / possible outcomes

2. Did the thesis mentor discuss your data with you? Were the following questions asked during discussion of experiments?

- Why did you follow this particular path?
- What protocol changes did you make as your work went on?
- What type of data did you obtain?
- How did you analyze your data?

3. Did the thesis mentor help prepare the presentation of your data and the significance of your findings?

Did you discuss the following in relation to your findings?

- How to present your data with tables, figures or illustrations
- Explanation of the medical/biological impact of your results
- What questions remain/what experiments could answer those questions?

4. Did the thesis mentor attend your presentation or arrange for someone in the laboratory to be present at your seminar?

Student signature

PRELIMINARY EXAMINATION FOR ADMISSION TO Ph.D. CANDIDACY

1. SCOPE

- 1.1. The preliminary examination is a process used to determine the acceptability of the student for advancement to degree candidacy based on the scientific quality of the student's project, the clarity of the student's written proposal, the completeness of the literature survey, and the student's originality and understanding of relevant biomedical concepts. The Molecular Medicine and Translational Science Ph.D. program uses an oral examination format with a written proposal. The student is responsible for the content of all coursework (required courses and electives) taken up to the time of the examination. Ph.D. candidates must have a grade point average of at least 3.0 in their graduate courses at the time of the preliminary examination.

2. POLICY

- 2.1. Each student will submit a proposal of research, termed the Preliminary Examination Research Proposal (PERP). The proposal will be based on the research grant written during the required course MMTS 724, Scientific Development and the Business of Science, as outlined in detail below and will be based on the research to be performed for the Ph.D. thesis. The student will submit the proposal to a Preliminary Examination Committee, consisting of four or more graduate faculty members and, if approved by the Committee, will defend the proposal in an oral examination. The Committee judges whether the student passes or fails the examination and informs the MMTS Program Directors. **The examination must be completed no later than September 1st at the beginning of the third year (end of the second year).** Extension beyond this time without the agreement of the preliminary examination committee and the Molecular Medicine and Translational Science Ph.D. Program Directors will put the student at risk of expulsion from the graduate school by the Dean for failure of academic progress.

Footnote: Based on the advanced degree, a M.D., D.V.M., or D.O. enters as a MMTS second (2nd) year PhD student.

3. PROCEDURE

3.1. Preliminary Examination Committee Selection:

- 3.1.1. The student's Preliminary Examination Committee must consist of at least four (4) members. These include the M.D. and Ph.D. advisors and at least two other committee members chosen by the student and his/her advisors, one of whom will serve as committee chair. Advisors and committee members must be approved by the MMTS Program Directors; advisors and at least one committee member must be a faculty member in the MMTS program, and all must be members of the Graduate Faculty. The Preliminary Examination Committee will become part of the student's dissertation advisory committee following the advancement of the student to candidacy. The chair of the preliminary committee does not have to be outside of the institute (Wake Forest Institute of Regenerative Medicine)/Center/department/section as the mentor. If the student wants to have the chair of the preliminary examination committee be the chair of the thesis committee, then he/she should consider the following requirement of the thesis committee. [The thesis dissertation committee must consist of at least five (5) members of the Graduate Faculty. The chair of the dissertation advisory committee cannot have a primary appointment in the same Institute (WFIRM)/Center/Department/Section as the mentor. Faculty from outside institutions may be appointed to the committee with approval by the dissertation advisor and the Dean of the Graduate School.]
- 3.1.2. The function of the committee is to determine acceptability of the student for advancement to degree candidacy by critically evaluating the specific quality of the project, the clarity of the written proposal, the completeness of the literature survey, and the student's originality and understanding of relevant biomedical concepts. The examining committee passes or fails the student. In case of failure, the committee can recommend that the candidate be dropped or that reexamination be

allowed no earlier than six months from the date of the first examination. A student may be reexamined only once.

3.2. **The Preliminary Examination Proposal:**

3.2.1 The PERP should build on the grant proposal prepared during MMTS 724 and should represent the ideas of the student, with an emphasis on creativity and innovation. Recognizing that the student's thesis research will be guided by the overall direction of their mentor's laboratory, the student is encouraged to work closely with their advisor, as well as members of the advisory committee, and other faculty during the preparation of the PERP. The student's advisor may review a draft of the PERP and offer editorial comments but should not edit the document, as incorporating the advisor's recommendations into the proposal remains the responsibility of the student.

All students are strongly encouraged to use their PERP as a basis for submission of a grant proposal to an extramural funding agency. If a grant proposal has been submitted before preparing the PERP, that proposal may be used as a *basis* for developing their PERP. In that case, the student should take care to include *novel features* in the PERP that build on, but go beyond, the ideas and experiments described in the extramural proposal. For example, this could include an expanded preliminary data section and/or a new or expanded aim that builds on results obtained in the period between the extramural proposal and the PERP. The student should also include a copy of their extramural Specific Aims page along with their outline, so that all concerned can appreciate how the PERP extends the concepts of the extramural proposal.

3.3. **Forms Required:**

Before the examination, the graduate student is responsible for filling out the student's part of **FORM A, Part 1:** MMTS PhD Program Student Progress Report and then providing the form to the preliminary examination committee chair. Immediately following the preliminary examination, the committee chair, with appropriate input from the committee, will complete the areas indicated for the dissertation committee on **FORM A, Part 2:** MMTS Program Student Progress Report and forward the form to Molecular Medicine and Translational Science administration. An example of the evaluation form is provided. An application for Candidacy for Doctor of Philosophy Degree from Wake Forest University Graduate School of Arts and Sciences is to be completed by the committee chair and forward the form to the Graduate School and MMTS Administration. (contact the Graduate School for the form)

3.4. **Dates and Deadlines:**

The date set for the oral exam will determine when all other deadlines fall. The examining committee may revise the schedule suggested below at their discretion. The deadlines should be explicitly communicated to the student.

3.4.1 Eight weeks before the date of the oral exam, the student will submit a 1 – 2 page outline of the proposal. One week later, the examining committee will meet briefly (1 hour) with the student to discuss the acceptability of the outline and to make suggestions regarding the project. The purpose of this meeting is to guide the student in preparing for the oral examination. It is appropriate to give examples of the issues that will be raised. However, detailed questioning and defense of the proposal should be reserved for the oral examination **and is not appropriate for this preparation meeting**. If there are no major problems, the student may proceed to complete the written proposal.

3.4.2 Two weeks before the oral exam, the student will submit the completed written proposal to the examining committee. Within 1 week, the committee chair will inform the student if the written proposal is acceptable for oral defense. If not, the committee will provide a detailed written critique and set a date for receipt of a revised proposal, usually within 2 - 3 weeks. If the revised proposal is

unacceptable, the examining committee will recommend to the Molecular Medicine and Translational Science Ph.D. program Executive Committee whether the student should be terminated from the Ph.D. program.

3.4.3 If the proposal is judged acceptable, the oral exam will proceed as scheduled. The student will present a concise (approximately 20 minutes) overview of the preliminary proposal and this will be followed by questions from the examination committee. Following the exam, a decision on acceptability of the student for admission to degree candidacy will be made by the committee. In the event that a student does not pass the oral exam, the examining committee can recommend that the student be refused admission to candidacy for the Ph.D. program, or that reexamination be allowed no earlier than six months from the date of the first exam. A student may be reexamined only once. The chair of the committee will inform the Molecular Medicine and Translational Science Ph.D. program Director of the outcome of the preliminary exam. The Molecular Medicine and Translational Science Ph.D. program Director then informs the Dean of the graduate office.

3.5. Proposal Format:

The outline and the final proposal will be patterned after NIH guidelines. The student should consult with the examining committee on questions of format during the preparation of the proposal. Typing will not be done by departmental secretaries on department time. The proposal should be clearly written in the student's own words and should be carefully proofed for spelling and grammatical errors.

3.5.1 Outline Format

The outline should be **no longer than two pages** (single spaced) and should consist of the following sections:

Specific Aims: A concise statement of the specific research objectives, including the hypotheses to be tested.

Justification: Explain the significance of the project and its originality, placed in the context of a brief summary of previous work done in the area.

Research Plan: Summarize experimental design to be used to address the specific aims, including methods to be used. References are not included in the Outline.

3.5.2 Final Research Proposal Format

The final research proposal should be patterned after NIH guidelines for RO1 type proposals. The document should be in Arial 11 font with 0.5 inches margins. The student should consult with his/her examining committee on questions of format during the preparation of the proposal. However, it must be emphasized that the proposal is to have a strong emphasis on significance, innovation and approach and less emphasis on preliminary data. The final proposal should consist of the following sections and may not include an appendix:

Title Page- student's name, title of project, advisor's name, date of examination

Abstract (1/2 page) - short summary of the problem to be addressed and the goals of the project

Specific Aims (1 page limit) - State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.

Research Strategy- Organize the Research Strategy in the specified order and using the instructions provided below. Start each section with the appropriate section heading - Significance, Innovation, Approach. This section (a-c) is limited to 12 pages total.

(a) Significance (suggest 1-3 pages)

- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) Innovation (suggest 1 page)

- Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
- Describe any novel theoretical concepts, approaches or methodologies, instrumentation or intervention(s) to be developed or used, and any advantage over existing methodologies, instrumentation or intervention(s).
- Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation or interventions.

(c) Approach

- This section includes the Preliminary Studies. Discuss the preliminary studies, data, and/or experience pertinent to this application.
- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
- If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.

References: Techniques to be used and all work and ideas of others should be properly referenced. References should include titles and follow a format approved by the committee. These are not included in the page limitations.

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| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| REVISION APPROVAL DATE: | 01/15/2004, 02/24/2005, 05/05/2005, 09/17/2009, 11/20/2009, 12/17/2009, 04/19/2012, 05/16/2013, 07/17/2013, 02/18/2014, 06/25/2014 |

THESIS EXAMINATION FOR Ph.D. DEGREE

1. SCOPE

- 1.1. Under the supervision of an advisory committee, the candidate prepares a dissertation embodying the results of investigative efforts in the field of concentration.

2. PROCEDURE

- 2.1. Requirements for dissertation submission and format are posted on the Graduate School website (<http://graduate.wfu.edu>).
- 2.2. Examination Committee: The dissertation committee must consist of at least five (5) members of the Graduate Faculty. These include the M.D. and Ph.D. advisors and at least three other committee members chosen by the student and his/her advisors. The chair of the dissertation advisory committee cannot have a primary appointment in the same Institute (WFIRM)/Department/Center/Section as the mentor. Faculty from outside institutions may be appointed to the committee with approval by the dissertation advisor and the Dean of the Graduate School. Advisors and committee members must be approved by the MMTS Program Directors; advisors and at least one committee member must be a faculty member in the MMTS program, and all must be members of the Graduate Faculty.
- 2.3. Students will submit a copy of the dissertation to the Dean of the Graduate School at least four weeks prior to the proposed date of the final examination and copies distributed to the examining committee at least three weeks before the final examination. The committee is polled by the chair of the examining committee at least ten days before the proposed date of the examination to determine the acceptability of the dissertation. After the defense the chair will ask each of the members of the examining committee whether the candidate has passed unconditionally, passed upon rectifying deficiencies, or failed. If all committee members agree that the student has passed unconditionally, there is a consensus to pass the examination. The committee chair will sign the ballot, submit the ballot to the Graduate School, and the student shall be recommended for award of the degree. For the other options (pass upon rectifying minor and major deficiencies and fail), the student and mentor are directed to the graduate school bulletin.

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| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | 06/25/2014 |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| REVISION APPROVAL DATE: | |

Recommendations for Research Advisory Committees, Chairs of Preliminary Examination and Dissertation Committees

Research Advisory Committee:

- Minimally, an annual meeting to assess student's progress.
 - The MMTS grad student will complete FORM A-PART 1 and then forward the entire form to their advisory/thesis committee chair to complete FORM A-PART 2 in conjunction with the committee. The completed forms will be forwarded to the student, the mentor and to MMTS Graduate Program Administration.

Chair of the Preliminary Examination Committee:

- At the time of the meeting, the Chair reviews Form A-Part 1-Summary of Student's Progress to date which has been filled out by the graduate student.
- At the end of the meeting, the Chair fills out Form A-Part 2 -as indicated reflecting the input from the committee and sends a copy to the student and MMTS administration.
- At the end of the meeting, the Chair fills out the application for Candidacy for Doctor of Philosophy Degree and sends to Graduate School and MMTS administration.
- Refer to the Bulletin of Wake Forest University for The Graduate School of Arts and Sciences preliminary examination requirements and MMTS Policies and Procedures on MMTS website.

Chair of the Dissertation Examination Committee:

- At the time of the final examination meeting, the Chair fills out the ballot for awarding the degree and submits it to the Graduate School.
- Refer to the Bulletin of Wake Forest University for The Graduate School of Arts and Sciences final examination requirements.

PUBLICATION REQUIREMENT FOR THE Ph.D. DEGREE

1. SCOPE

- 1.1. To establish publication criteria required for the Molecular Medicine and Translational Science Ph.D. program students to proceed toward completing the Ph.D. degree.

2. POLICY

- 2.1. Before a student can schedule the defense of their dissertation, it is required that at least one first author publication of original data be accepted in a peer- reviewed journal. As with other policies the dissertation committee can consider extreme circumstances if variations from this policy are justified.

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| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | 06/18/2009 |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. Executive Committee |
| REVISION APPROVAL DATE: | |

THESIS PREPARATION

1. SCOPE

1.1. To establish guidelines with regard to student thesis printing and binding.

2. POLICY

2.1. The Molecular Medicine and Translational Science Ph.D. program will defray the costs of printing and binding two (2) copies of the graduate student's final, committee-approved thesis: one (1) for the Molecular Medicine and Translational Science Ph.D. student, and one (1) for the student's advisor.

2.2. The Molecular Medicine and Translational Science Ph.D. program will keep a copy of the graduate student thesis on CD in the Molecular Medicine and Translational Science Ph.D. program administrative office.

2.3. Strict guidelines for preparation of the thesis are established by the Graduate School office and should be obtained from the registrar prior to writing the thesis. These include deadlines the student must meet for the thesis to be accepted by the Graduate School and the student's thesis committee.

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|-------------------------------------|---|
| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | 01/15/04 |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| REVISION APPROVAL DATE: | 09/15/11 |

MMTS 711/712: TRANSLATIONAL SCIENCE SEMINAR SERIES – PRESENTATION POLICY

1. SCOPE

1.1. To establish criteria with regard to students who need to do presentations for the fall and spring semesters of the current academic year.

2. POLICY

2.1. All MMTS students will present one research talk during the current academic year. Scheduling will be arranged by the course director in consultation with the students and their advisors. More “senior” students will present first in the schedule, continuing through to newer students. The usual format will be a 20 minute talk with 10 minutes for questions. Variations in this schedule, if needed, are at the discretion of the course director.

2.2. Students are exempt the semester they defend their dissertation.

2.3. MDs in clinical residency/fellowship/or T32 programs are expected to participate for the first 2 years of laboratory work, but are exempted during their clinical schedules.

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| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | 09/02/04 |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. program Executive Committee |
| REVISION APPROVAL DATE: | 10/19/16, 03/15/17 |

REQUIREMENTS FOR COURSE EXEMPTIONS FOR MMTS Ph.D. STUDENTS

1. SCOPE

- 1.1. To establish criteria which must be met in order for the Molecular Medicine and Translational Science Ph.D. program Curriculum Committee and Executive Committee to consider granting a required course exemption for a current MMTS Ph.D student.

2. POLICY

- 2.1. The course previously taken must:
 - 2.1.1. Be a graduate level course and meet the same academic standards as our equivalent course
 - 2.1.2. Have credit hours equal to our course.
- 2.2. The student must have attained a grade of B or better (≥ 3.0)
- 2.3. The decision to grant any course exemption will be made by the MMTS Curriculum Committee in consultation with the MMTS Executive Committee.

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| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | 09/17/2009 |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. Executive Committee |
| REVISION APPROVAL DATE: | |

STUDENT TRAVEL FUNDS

1. SCOPE

1.1. The Molecular Medicine and Translational Science Ph.D. program strongly encourages and supports student participation and presentation at scientific meetings. In this manner, students learn how to present their findings for public critical review, as well as gain exposure to the scientific community. It is the student's Principal Investigator's responsibility to support student travel. However, we recognize that all PI's do not have secure funding at all times. This policy is to establish the criteria necessary for the Molecular Medicine and Translational Science Ph.D. program to support student travel, in the case of need, using Molecular Medicine funds. Molecular Medicine will grant travel awards for up to three (3) Molecular Medicine and Translational Science Ph.D. program students per academic year. Two travel awards will be granted during the fall semester and one travel award will be granted during the spring semester of each academic year. Travel awards not utilized during the fall semester will carry over into the spring semester of each academic year. Molecular Medicine and Translational Science Ph.D. program students must meet the criteria established by the below policy to be eligible to receive travel funds.

2. POLICY

- 2.1. The student **MUST** be presenting at the meeting. Posters and talks are typical of the types of presentations we support, and the student must be doing the presenting (not a co-author).
- 2.2. Funds are capped per student, with the amount determined on a yearly basis, and must be matched by the students' PI or another source of funds. Each request must be considered by the Executive Committee. Thus, it is unlikely that multiple meetings for a student will be approved within the same year.
- 2.3. There **MUST** be a demonstration of need for the funds. It is the principal investigators responsibility to fund the student to go to meetings. However, we recognize that all PI's do not have secure funding all the time and thus, may not have enough to send a student to a meeting when unanticipated expenses arise. The purpose of these funds is to help in these situations, not replace the PI's grant funding or save dollars for the PI.
- 2.4. To make application for this program, the student should discuss the travel and funding issues with their PI. If both are in agreement that additional funds will be required, the student should contact the Molecular Medicine and Translational Science Ph.D. program Administrative Assistant with the request. The request must include the following: a budget for the trip, a short paragraph explaining the location of the meeting, what the student will be presenting at the meeting and why the funds are needed. This must occur at least one month prior to the meeting and preferably at the time of application to the meeting.

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| APPROVAL REQUIRED: | Majority Vote of the Molecular Medicine and Translational Science Ph.D. Executive Committee |
| INITIAL ISSUE APPROVAL DATE: | 11/13/2003 |
| APPROVED BY: | Molecular Medicine and Translational Science Ph.D. Executive Committee |
| REVISION APPROVAL DATE: | 08/16/2006, 10/03/2006, 05/21/2009, 08/20/2009, 04/19/12 |

MOLECULAR MEDICINE AND TRANSLATIONAL SCIENCE GRADUATE STUDENT ATTENDANCE POLICY

1. SCOPE

1.1 To establish an attendance policy for MMTS students.

2. POLICY

2.1 Attendance for class, the Translational Science seminars and in the laboratory is expected. Official excused absences include illness, illness or death of an immediate family member, religious holiday and jury or other civic duty. Excuse because of other reasons is at the discretion of the instructor or advisor.

2.2 Students in the semester they plan to graduate or in their 6th year will register for thesis only, but are still expected to attend the Translational Science Seminar Series. If for some reason they don't make graduation that semester, then they will register as thesis only until they graduate. However, attendance at the seminar is still expected.

3.2 Attendance at MMTS student defense seminars is highly encouraged.

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CLASS ADVISORY POLICY

1. SCOPE

- 1.1 Each class will be assigned a faculty class advisor who will meet with the students and advise them on a semi-or annual basis to provide logistical information regarding progress toward the PhD in the MMTS program. He/she will also serve as an advocate or ombudsman for the students. The faculty advisor will schedule the meeting and the students are required to attend. The faculty advisor will stay with the same class until they graduate. All degree-seeking students in the MMTS program are required to attend these meetings. There will be an annual meeting of the class advisors with the program directors to review the program.

2. POLICY

- 2.1 Second year PhD Student Advisor: The second year PhD class will be assigned a faculty advisor and meetings will be arranged twice a year. The first meeting will occur in August of their first year in MMTS. Topics to be discussed include but are not limited to: introduction to MMTS, clinical experience, working with mentor to select preliminary committee, selection of M.D. and Ph.D. members of the committee, selection of the statistics course, and selection of electives.
- 2.2 Third year PhD Student Advisor: The third year PhD class will meet with their faculty advisor twice a year. Topics to be discussed include but are not limited to: delays in setting up preliminary examination, thesis, and necessity of preparing first author publications.
- 2.3 Subsequent Years: In subsequent years, classes will meet annually with their faculty advisor. Topics to be discussed include but are not limited to: how to start positioning oneself to graduate; first author publications/preparation of thesis.

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