Sheila and David Fuente
Graduate Program in
Cancer Biology
Graduate Student Handbook
2017-2018
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<td></td>
</tr>
</tbody>
</table>
CANCER BIOLOGY GRADUATE PROGRAM ADMINISTRATION

This handbook contains the guidelines for current students as well as those entering the Sheila and David Fuente Graduate Program in Cancer Biology (CAB). Both program-specific and University degree requirements and expectations are outlined here. Students in ongoing programs (i.e., M.D./Ph.D.) may have additional requirements. The information in this handbook is subject to change; if you have questions regarding requirements please contact the CAB Graduate Program Coordinator. Students must keep abreast of current rules and procedures.

Ralf Landgraf, Ph.D.
Graduate Program Director
Phone: (305) 243-5815
E-mail: rlandgraf@med.miami.edu

Sarah Sandiford
Graduate Program Coordinator
Phone: (305) 243-2287
E-mail: sls324@med.miami.edu

Office of Graduate & Postdoctoral Studies (OGPS)
(305) 243-6406
RMSB 1st Floor, Medical Campus

Office of the Graduate School
(305) 284-4154
1541 Brescia Avenue, Coral Gables

Website: http://biomed.med.miami.edu/graduate-programs/cancer-biology/overview

CANCER BIOLOGY STEERING COMMITTEE

Steering Committee Members
Ralf Landgraf, Ph.D.
Enrique Mesri, Ph.D.
Jonathan Schatz, M.D.
Jonathan C. Trent, M.D., Ph.D.
Ramiro Verdun, Ph.D.
Athula Wikramanayake, Ph.D.
Fiorella Magani (student representative)*
Dilara Koyuncu (student representative)*

CAB Representatives to PIBS Committees:

PIBS Admissions Committee (AOC)
TBD

PIBS Curriculum Committee
Mary Lou King, Ph.D.
TBD (alternate)

*CAB graduate students are selected by their peers to serve a one-year term.
INTRODUCTION

Since cancer can have its roots in the deregulation of a broad range of cellular processes, the study of Cancer Biology is by definition highly interdisciplinary. In addition, concepts developed at the lab bench are constantly informed by and tested against the implementation of research in the clinic. This cycle of basic science evaluation, translation, and reevaluation of concepts provides a powerful driving force. It also means that cancer researchers, regardless of whether their daily work is more basic or translational in nature, have to be fluent in the language and concepts of both arenas and capable to transfer this information into cutting edge, hypothesis driven research. The Sheila and David Fuente Graduate Program in Cancer Biology draws upon clinical and basic scientists from multiple departments, schools, and colleges of the University of Miami to provide a research and training environment that prepares the next generation of cancer biologists for a successful career in cancer research.

The scientific focus is broadly cancer research with an emphasis on fundamental cellular processes and the derangement of normal pathways in cancer etiology and progression. Identification of novel diagnostics, therapeutic targets and mechanisms are major research areas. The Program emphasizes cross-disciplinary approaches encompassing novel concepts and state-of-the-art techniques of molecular biology, biochemistry, genetics, genomics, proteomics, structural biology, cell biology, pharmacology and molecular medicine. In this endeavor, the Cancer Biology Graduate program strives to integrate students into the extensive and rapidly expanding clinical and translational research programs of the Sylvester Comprehensive Cancer Center (SCCC).

The objectives of the Program are reflected in its innovative Ph.D. curriculum that emphasizes several important goals including (1) to provide a foundation in cancer biology that demonstrates the interrelationship of biological discovery and clinical application, (2) to emphasize explicit training in scientific reasoning, and (3) to provide students with two-tier mentoring. The students will receive guidance from both a Research Mentor and traditional graduate committee, complemented by a Physician Mentor. The Research Mentor is the dissertation advisor, while the Physician Mentor will provide the student with a clinical perspective in cancer biology including issues of diagnosis, management and treatment of cancer patients, and clinical research approaches.

Ralf Landgraf, Ph.D.
Associate Professor of Biochemistry and Molecular Biology
Director, Sheila and David Fuente Graduate Program in Cancer Biology
CORE COURSE OFFERINGS

CORE CURRICULUM for CANCER BIOLOGY GRADUATE PROGRAM

Students **MUST** take at least one pertinent elective course in order to meet the requirements of the degree. Students should select electives with the guidance of their Dissertation Committee and Research Mentor. Electives must be approved by CAB Graduate Program Director.

YEAR 01 (PIBS)

**SPRING SEMESTER**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Biochemistry &amp; Molecular Biology#</td>
<td>CAB 710*</td>
<td>3 cr.</td>
</tr>
<tr>
<td>(Pre-requisite for all CAB courses except CAB 720)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dialogues with Cancer Clinicians*</td>
<td>CAB 720*</td>
<td>1 cr.</td>
</tr>
</tbody>
</table>

#CAB 710 is a CAB curriculum requirement and a pre-requisite for all upper-level CAB courses (except CAB 701 & CAB 720). Students considering the CAB Program are strongly encouraged to take CAB710 during the first (PIBS) year.

YEAR 2

**FALL SEMESTER**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Seminar Course*</td>
<td>CAB 701*</td>
<td>1 cr.</td>
</tr>
<tr>
<td>Tumor Biology*</td>
<td>MDB 765*</td>
<td>3 cr.</td>
</tr>
<tr>
<td>Dissertation Research: Pre-Candidacy*</td>
<td>CAB 830*</td>
<td>2 cr.</td>
</tr>
<tr>
<td>Translational to Clinical Research*</td>
<td>CAB 705*</td>
<td>0 cr.</td>
</tr>
</tbody>
</table>

**SPRING SEMESTER**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Seminar*</td>
<td>CAB 701*</td>
<td>1 cr.</td>
</tr>
<tr>
<td>Special Topics in Cancer Research</td>
<td>CAB 712, 713*, 714*, 715</td>
<td>2 cr. each</td>
</tr>
<tr>
<td>Dissertation Research: Pre-Candidacy*</td>
<td>CAB 830*</td>
<td>2 cr.</td>
</tr>
<tr>
<td>Translational to Clinical Research*</td>
<td>CAB 705*</td>
<td>1 cr.</td>
</tr>
</tbody>
</table>

The following four modules are half semester each and listed under “Special Topics in Cancer Research”.

**Offered alternate years Spring 2018, 2020, 2022**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Epidemiology, Prevention and Biobehavioral Oncology*</td>
<td>CAB 714*</td>
<td>2 cr.</td>
</tr>
<tr>
<td>(7 weeks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast and Genitourinary Cancers (7 weeks)</td>
<td>CAB 715</td>
<td>2 cr.</td>
</tr>
</tbody>
</table>

**Offered alternate years Spring 2019, 2021, 2023**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viral Oncology &amp; Tumor Immunology (8 weeks)</td>
<td>CAB 712</td>
<td>2 cr.</td>
</tr>
<tr>
<td>Molecular Cancer Therapeutics* (6 weeks)</td>
<td>CAB 713*</td>
<td>2 cr.</td>
</tr>
</tbody>
</table>
**Required Courses and Modules**

**QUALIFYING EXAM (described in detail page 12)**

Students will form a five (5) member Dissertation Committee and complete a qualifying exam in their second year of graduate school. The qualifying exam consists of a NIH-style grant application written by the student on their dissertation research project. Students orally present and defend the proposal to their Dissertation Committee.

**YEAR 3**

<table>
<thead>
<tr>
<th>FALL SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Seminar*</td>
</tr>
<tr>
<td>Logic and Reasoning in Translational Cancer Research: Bench to Bedside/Bedside to Bench (Fall 2016, 2018, 2020)*</td>
</tr>
<tr>
<td>Doctoral Dissertation Research: Post Candidacy*</td>
</tr>
<tr>
<td>Translational to Clinical Research*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPRING SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Seminar*</td>
</tr>
<tr>
<td>Doctoral Dissertation Research: Post Candidacy*</td>
</tr>
<tr>
<td>Translational to Clinical Research*</td>
</tr>
</tbody>
</table>

**YEAR 4**

<table>
<thead>
<tr>
<th>FALL SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Dissertation Research: Post Candidacy*</td>
</tr>
<tr>
<td>Translational to Clinical Research*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPRING SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Dissertation Research: Post Candidacy*</td>
</tr>
<tr>
<td>Translational to Clinical Research*</td>
</tr>
</tbody>
</table>

**YEAR 5**

<table>
<thead>
<tr>
<th>FALL SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Dissertation Research: Post Candidacy* or Research in Residence*</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
YEAR 5 (Continued)

SPRING SEMESTER

<table>
<thead>
<tr>
<th>Doctoral Dissertation Research: Post Candidacy* or Research in Residence*</th>
<th>CAB 840*</th>
<th>2 cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAB 850*</td>
<td>1 cr.</td>
</tr>
</tbody>
</table>

Required course credits 36 cr. [700 level courses (required or elective)]

Dissertation Research 24 cr. [800 level courses]

Total All Years: 60 credits
COURSE DESCRIPTIONS FOR CANCER BIOLOGY GRADUATE PROGRAM

Modules designated with an asterisk * are required.

<table>
<thead>
<tr>
<th>PIBS Yr. 01</th>
<th>CAB Yr. 02</th>
<th>CAB Yr. 03</th>
<th>CAB Yr. 4</th>
<th>Sufficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL</td>
<td>CAB 701*</td>
<td>FALL</td>
<td>FALL</td>
<td>CAB 850*</td>
</tr>
<tr>
<td>Pibs</td>
<td>CAB 705*</td>
<td>CAB 701*</td>
<td>CAB 705*</td>
<td></td>
</tr>
<tr>
<td>Curriculum*</td>
<td>MDB 765*</td>
<td>CAB 750*</td>
<td>CAB 750*</td>
<td>CAB 800*</td>
</tr>
<tr>
<td></td>
<td>CAB 830*</td>
<td>CAB 705*</td>
<td>CAB 830*</td>
<td>CAB 840*</td>
</tr>
<tr>
<td>SPRING</td>
<td>CAB 701*</td>
<td>CAB 712, 713*</td>
<td>CAB 714*, 715</td>
<td></td>
</tr>
<tr>
<td>CAB 710*</td>
<td>CAB 720*</td>
<td>CAB 705*</td>
<td>CAB 840*</td>
<td></td>
</tr>
<tr>
<td>CAB 720*</td>
<td>CAB 830*</td>
<td>CAB 840*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CAB 710 Cancer Biochemistry and Molecular Biology*
3 credits, Spring Semester
Tuesday/Thursday, 9:00 – 10:30 a.m.
This is a required entry-level course designed to introduce students to the major concepts and principles of cell growth deregulation in cancer with a major emphasis on molecular mechanisms. Topics include: oncogenes, tumor suppressors, mechanisms of uncontrolled cell growth, receptors and intracellular signal transduction pathways.

Note: Students considering the CAB Program are strongly encouraged to take this course during the first (PIBS) year. CAB 710 is a CAB curriculum requirement and a pre-requisite for all upper-level CAB courses except CAB 701 and CAB 720. Students who did not take CAB 710 in Year 1 can ask the Course Director for an exemption of the pre-requisite.

CAB 701 Student Seminar*
1 credit, Fall and Spring Semester
Wednesdays, 4:00 – 5:00 p.m.
This is a required course for all CAB students as it offers instruction on the fundamental elements of scientific speaking. The ability to communicate effectively is essential for scientists. All CAB students are required to present their research each year as a 25 min (2nd year students) or 55 min seminar (3rd year and above). Only 2nd and 3rd year students need to register for this course to obtain credit. Students who are in their 4th year and above also give yearly seminars but are not enrolled.

MDB 765 Tumor Biology*
3 credits, Fall Semester
Pre-requisite is CAB 710 – Cancer Biochemistry and Molecular Biology
This required course, comprised of lectures and student-led literature discussion, is intended to provide broad-based instruction on the modern molecular and cellular aspects of cancer biology,
basic and translational research. The course highlights multiple areas including cell cycle, apoptosis, epidemiology, angiogenesis, and meets two times weekly.

CAB 705  Translational to Clinical Research*
1 credit each year in years 2 through 4
Beginning in the fall of their second year, students participate in "Translational to Clinical Research", which spans years two through four of the program. Students are introduced to clinical trials, pathology reviews, tumor boards, the protocol review process and have an opportunity to interact with physicians who care for cancer patients and conduct clinical trials. The student’s Physician Mentor advises and directs the student in the most relevant activities to attend and discusses the student’s experience with them every semester. Students are required to attend 2 meetings each semester for a total of 12 meetings in addition to discussion with their Physician Mentors. A short written report of each review meeting of the student’s experience is required. Didactic seminars are not accepted.

CAB 720 Dialogues with Cancer Clinicians*
1 credit, Spring
Monday, 5:00 – 6:00 p.m.
This required course features Physician Mentors of the Cancer Biology Graduate Program who discuss clinical aspects of cancer treatment with an emphasis on continuity of care of newly diagnosed patients between disciplines, unmet clinical needs, and research. Mentors provide clinical perspectives on their areas of specialization as it relates to patient care including diagnosis, staging, therapy, and outcomes.

CAB 750 Logic and Reasoning in Translational Cancer Research: Bench to Bedside/Bedside to Bench*
3 credits, Fall (Offered Alternate years 2018, 2020)
Prerequisites: MDB 765, minimum of one CAB Special Topics modules (CAB 712, 713, 714, 715), CAB 705, 710, 720
An important facet of the Cancer Biology Ph.D. Program is the training of students in the interrelationships between basic research and clinical medicine, i.e., translational research. The goal of this advanced course is to expose students to the scientific reasoning and logic underlying problem solving in clinical cancer research. This course is designed to help students integrate information and develop the thought processes necessary to critically evaluate information in the literature and experimental approaches, conceptualize problems in the field and identify areas for scientific exploration. Students learn how the knowledge obtained from basic research laboratories is applied to clinical problems including prevention, diagnosis, prognosis, and therapeutic treatment of cancer. Specific examples of translational research, i.e., laboratory to clinic/clinic to laboratory are emphasized. Students also learn the key role of clinical observation in identifying basic research problems.
CAB 830 Dissertation Research Pre-Candidacy*
2 credits, Fall, Spring, Summer I Semesters
Required for all Ph.D. candidates. The student will enroll for credits as determined by their advisor/Office of Graduate and Postdoctoral Studies.

CAB 840 Doctoral Dissertation Post-Candidacy*
1-12 credits, Fall, Spring, Summer I Semesters
Required for all Ph.D. candidates. The student will enroll for credits as determined by their advisor/Office of Graduate and Postdoctoral Studies.

CAB 850 Research in Residence*
1 credit
Student must be registered in the semester they plan to graduate (this may or may not be the semester the student defends). Used to establish research in residence for the PhD after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Student may be regarded as full-time residence as determined by the Dean of the Graduate School.

SPECIAL TOPICS IN CANCER RESEARCH

Modules designated with an asterisk * are required.
These modules provide second and third year graduate students with an overview of basic and translational cancer research concepts. The full spectrum of the Research Programs of the Sylvester Comprehensive Cancer Center is represented in these modules. The modules highlight how unmet clinical needs are translated into scientific questions and subsequent research programs. Discussions include new therapeutic approaches and emerging research opportunities.

CAB 712 Viral Oncology and Tumor Immunology
2 credits, Spring I (8 week module) (Offered alternate years 2019, 2021, 2023)
Tuesday/Thursday, TBD
This module emphasizes state of the art knowledge of each discipline and student participation in a problem-based learning context. Topics include viral carcinogenesis and epidemiology, Hepatitis Viruses, Herpes Viruses, Epstein Barr Virus, Human Papillomavirus, Kaposi’s Sarcoma, viral-induced lymphomas, viral oncolysis, and mechanisms of anti-tumor immunity.

CAB 713 Molecular Cancer Therapeutics*
2 credits, Spring II (6 week module) (Offered alternate years 2019, 2021, 2023)
Tuesday/Thursday, TBD
This required module explores the signal transduction pathways critical for cancer cell proliferation and survival that may provide new therapeutic targets, approaches for identification and validation of molecular targets within these pathways. Students are introduced to the strategies used in the discovery, design of biological and drug-based therapies, and the implementation of clinical trials.
CAB 714 Cancer Epidemiology, Prevention and Biobehavioral Oncology*
2 credits, Spring I (7 week module) (Offered alternate years 2018, 2020, 2022)
Tuesday/Thursday 3:30 – 5:00 p.m.
The overall philosophy of this required module is to introduce students to the basic principles of biobehavioral oncology and cancer epidemiology and cancer prevention and control. The course will explore cancer epidemiology approaches used to identify the molecular and genetic mechanisms of cancer risk and progression and how these are used to develop predictive models in treatment response. Methods for identifying social, environmental, and biological reasons for cancer disparities among different populations will also be covered. Sections on bio-behavioral oncology include: health behavior change processes in persons at risk for and diagnosed with cancer; methods to improve adaptation to cancer diagnosis and treatment, psychosocial intervention research techniques and bio-behavioral processes explaining their effects on health and quality of life (QOL), translation of behavioral and psychosocial intervention to the community, symptom/treatment side effects management approaches, predictors of late effects of cancer treatment and development of preventative interventions.

CAB 715 Breast and Genitourinary Cancers
2 credits, Spring II (7 week module) (Offered alternate years 2018, 2020, 2022)
Tuesday/Thursday 3:30 – 5:00 p.m.
This module highlights key aspects of the cellular and molecular mechanisms of breast, prostate, renal and bladder cancers as well as providing an overview of cancer detection, diagnosis, and therapy. Emerging research opportunities are identified. Topics include estrogen receptor and androgen receptor signaling, cancer progression, endocrine therapies and resistance. Key signaling pathways and the biology of metastasis will be discussed.

RECOMMENDED ELECTIVES

HGG 660 Bioinformatics Theory and Practice
3 credits, Spring
Pre-requisites: Familiarity with basic genetics, genome structure, and the methods and approaches of molecular biology are necessary.
Bioinformatics is the quintessential transdisciplinary field that merges biology with the computational sciences in a way not seen previous to the current era of biomedical research. The aim of this course is to introduce students to the theories and practices of bioinformatics, particularly as applied to biomedical research in the genomics arena. As such, most classes will include a lecture that explains the concepts, followed by a hands-on lab session with worksheets and exercises. Basic methods for database mining, sequence alignments and motif discovery will recur as the application of these methods has evolved into algorithms for next generation sequencing data analysis and functional genomics analysis of variation. Freely available web resources will be used whenever possible, and the course will include an introductory tutorial to a scripting language such as perl or python.
DISSERTATION COMMITTEES

In consultation with the student’s research mentor and with the approval of the CAB Graduate Program Director, each student will form a five-member Dissertation Committee in the fall semester of their second year and write and defend his/her Qualifying Exam early in the spring semester. The committee will be comprised of the Research Mentor, Physician Mentor, and three University of Miami graduate faculty members. At least two of the three regular committee members must be CAB faculty who are either Research Mentors or Associate Program Members. The other committee member must be part of the University of Miami graduate faculty. The committee will elect one of the CAB research (not physician) members as chair of the committee. The Dissertation Committee must be approved by the CAB Graduate Program Director (see form on page 43). Once the student is admitted to Ph.D. Candidacy (after the qualifying exam is passed), the Dissertation Committee is formally approved and appointed by the Dean of the Graduate School. Qualifying exam, dissertation proposal, progress, sufficiency, and dissertation defense meetings require the presence of all committee members. In the event that a committee member cannot attend at the last minute, the student must seek permission of the Graduate Program Director to hold the meeting.

External Examiners: CAB does not require external examiners for dissertation defenses. However, there is nothing to prohibit a research mentor from inviting an external examiner, at their expense, to attend the dissertation seminar and defense.

The duties of the Dissertation Committee are: 1) to conduct the qualifying exam; 2) to consult with and advise the student on their research; 3) to meet at least once every 9 months to review the student’s progress. If the student and mentor or committee members want to meet on a more frequent basis that is at their discretion; 4) to provide feedback on the student’s progress at subsequent progress meetings; 5) to read the student’s draft dissertation and comment on it; 6) to attend the dissertation defense, conduct the final oral examination and confirm that the student’s dissertation is original research; 7) to review and discuss the Individual Development Plan (IDP) at least yearly.

RESEARCH MENTOR

The role of a Research Mentor is to guide and supervise all aspects of the graduate student’s dissertation research. A detailed list of CAB Research Mentors is provided on pages 31-36.

If a problem develops between the student and mentor, the mentor or student should contact the CAB Graduate Program Director (GPD) to help resolve any issues. If the Research Mentor should happen to be the GPD, the CAB Steering Committee will be notified. If the student and/or mentor elect to terminate the relationship for non-academic reasons, they must notify the GPD and Dissertation Committee Chair. A new mentor selection process will be initiated with the guidance of the GPD and Steering Committee. The Dissertation Committee may be retained or dissolved upon consultation with the Dissertation Committee Chair and GPD.
**PHYSICIAN MENTOR**

The Physician Mentor introduces CAB graduate students to clinically relevant issues of diagnosis, management and treatment of cancer patients as well as to clinical research approaches.

1. The Physician Mentor will provide the student with a clinical perspective in cancer biology.

2. The Physician Mentor will be part of the student’s Dissertation Committee alongside the Research Mentor.

3. The student’s Physician Mentor advises and directs the student in the most relevant activities to attend for CAB 705 and discusses the student’s experience with them every semester.

4. The Physician Mentor will complete an evaluation on student’s progress and provide feedback accordingly. The evaluation will be distributed to the student’s committee, CAB director and coordinator. A list of CAB Physician Mentors is provided on pages 37-40

**QUALIFYING EXAM**

**Qualifying Exam Timeline**

<table>
<thead>
<tr>
<th>Oct –Dec Y2</th>
<th>Form 5 Member Dissertation Committee</th>
<th>Submit committee formation paperwork to CAB coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-Mar Y2</td>
<td>Qualifying Exam</td>
<td><strong>Part A</strong> Write 12-page research proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Part B</strong> Oral presentation to committee</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>2 weeks prior</strong> to meeting submit written proposal to dissertation committee</td>
</tr>
</tbody>
</table>

Students write a 12-page NIH style grant application on their dissertation research topic. The Qualifying Exam is submitted to the student’s Dissertation Committee, CAB Graduate Program Director and Coordinator two weeks prior to the oral examination. The oral examination is the student’s defense of the proposal and normally lasts from two to three hours. The Graduate Program Director will serve as an ex officio (non-voting) member at the Qualifying Exam oral defense. The grading of the qualifying exam is equally weighted between the written research proposal and the student’s oral defense, and is pass/fail.

The grade reflects the consensus of the student’s Dissertation Committee, and is communicated as a brief report, written by the Chair of the Dissertation Committee, to the Graduate Program Director. (If a consensus is not reached, the Graduate Program Director provides a written summary of the issues under consideration and the pass/fail decision is made by a majority vote of the Steering Committee). If the student’s performance (written or oral) is regarded as unsatisfactory by the Dissertation Committee, the student is required to either revise the proposal and/or re-defend it within two
months. The student may be required to demonstrate proficiency in specific areas of cancer biology. Failure of the Qualifying Exam on the second attempt is grounds for dismissal from the Program.

**EXPECTATIONS FOR STUDENTS COMPLETING THE CAB QUALIFYING EXAM**

1. Students should exhibit the potential for original scientific thought. They should be familiar with the relevant literature and be able to identify significant research questions in their field. Students should have a good understanding of the underlying principles of the experimental methodologies proposed. Students should show an ability to critically analyze data and to anticipate experimental outcomes. The Qualifying Exam Research Proposal is submitted in Word format, hand delivered in print and emailed to the student’s Dissertation Committee, GPD and GPC two (2) weeks prior to the oral examination.

2. Students must design and propose at least one completely original aim (or several original subaims).

3. Mentors or other faculty members may critique the proposal and make general suggestions but should not provide “core” ideas or edit the document. Papers and grant applications from the mentor are appropriate sources of information and may serve as guides. **However, under no circumstances may students use the wording from these documents or any other source of information that is not their own (internet, scientific literature etc.). Using the words or ideas of another (without attribution) constitutes plagiarism, an honor code violation, which will not be tolerated by the Program.**

4. Students should adhere to the exam format (see Page 49). The use of diagrams and schematics is strongly encouraged.

5. For the oral defense component of the QE, students should prepare a 15-20 minute (no more) presentation providing: the rationale, a brief background, preliminary data (if available) and overview of the specific aims of the dissertation project.

6. Students should have a basic working knowledge of cancer biology (see Core Areas in Cancer Biology Training below) and demonstrate proficiency in the 2-3 areas that are directly related to their research.

7. Research mentors should sign off on QE proposals certifying that the document was written entirely by the student and that the student independently conceived and designed at least one aim (or several subaims).

8. Mentors can ask but cannot answer questions during the qualifying exam.

9. Students who do not pass the exam (both written and oral components) will be required to revise the proposal and/or re-defend it at an oral examination. Students will be allowed one chance to retake the qualifying exam.

Core Areas of Cancer Biology Training

- Dysregulation of signal transduction pathways
- Oncogenes and tumor suppressor genes
- Control of cell proliferation, cell cycle and cell death
- Carcinogenesis, DNA damage and repair
- Tumor angiogenesis, invasion and metastases
- Cancer virology
- Basic histopathology of neoplasia
- Tumor microenvironment and stromal interaction
- Cancer genetics and epigenetics
- Cancer immunology
- In vitro and in vivo tumor models
- Cancer stem cells

FORMAT FOR CAB QUALIFYING EXAMS (See Page 49)

Cover Page: Name, Title of Proposal, Mentor, Dissertation Committee Members, Date of Oral Qualifying Exam, and MENTOR SIGNATURE stating that the document was written entirely by the student and includes at least one original aim (or several original subaims).

Research Proposal: The document should be well formulated and presented in sufficient detail that it can be evaluated for its scientific merit. Mentors may provide feedback but the document is to be written solely by the graduate student. Include sufficient information to permit an effective evaluation without faculty having to refer to the literature citations. Brevity and clarity in the presentation are considered indicative of a student’s approach and ability to conduct an exceptional project. Use of schematics, diagrams and flow charts are encouraged. The document (sections 1-5) is not to exceed 12 pages [this includes all tables and figures, single-spaced, 12 point font, at least 0.5 inch margins, Arial, Helvetica, Palatino Linotype or Georgia typeface]. Below is the format:

1. Abstract / Description: State the broad, long-term objectives and specific aims of the research proposal, making reference to the health relatedness of the project (if such exists). Describe concisely the research design and methods for achieving these goals. (Generally no more than half a page)

2. Specific Aims: State the specific purpose(s) of the research proposal and the hypotheses to be tested. (Generally 1 page)

3. Background and Significance: Provide the background to the proposal. State concisely the importance of the research described in this application by relating the specific aims to broad, long-term objectives. (Generally 2-3 pages)

4. Preliminary Results (Generally 1-2 pages)

5. Research Design and Methods: Provide a description of the research design of the experiments
proposed and the procedures to be used to accomplish the specific aims. Normally, this section is laid out in the order of the specific aims. For each specific aim, describe the proposed experiments including controls. Describe the major experimental techniques and methodologies you plan to use. Do not provide detailed descriptions of standard models. Describe the rationale for the choice of methods as well as potential problems or limitations. Explain how problems and limitations will be dealt with for each specific aim. Discuss the anticipated results of the proposed experiments (include alternative possibilities), and how they will be interpreted. How will the anticipated results support or disprove your hypothesis? Include any statistical methods by which the data will be analyzed. You may want to include a tentative time table for the proposed experiments. (Generally 5-7 pages)

6. **Literature Citations** Insert these at the end of the research proposal. Each citation MUST include names of all authors, the complete title, book or journal, volume number, page numbers (beginning and end), and year of publication. The citations ARE NOT part of the 12 page limit.

*Format and guidelines adapted from NIH and UMMSM Microbiology & Immunology Program.*

**ADMISSION TO PH.D. CANDIDACY**

To be admitted to candidacy students must have completed all of the following:

1. Maintain a grade point average of 3.0 or better in courses.
2. Be accepted by a program faculty member as a dissertation student.
3. Pass the qualifying exam

Students must be admitted to candidacy for the Ph.D. in a semester prior to the one in which the degree will be awarded. The graduate program coordinator will file the form requesting admission to candidacy for the student. To receive the Ph.D. degree, a student must submit a formal application to the Graduate School prior to the posted deadline date, in the semester in which the degree will be awarded. The student should adhere strictly to required guidelines, which are available at: [http://www.miami.edu/grad/](http://www.miami.edu/grad/)

Upon meeting all requirements and passing the qualifying exam, admission to candidacy for the degree is approved. Students must be admitted to candidacy before the dissertation defense is scheduled. Students may not receive the degree in the same semester or summer session in which he/she is admitted to candidacy. See QE to Defense guideline in appendix (page 44).

**INDEPENDENT DEVELOPMENT PLAN**

The student will submit their Independent Development Plan (IDP) (see page 46 for format) to committee members at each progress meeting starting at their dissertation proposal meeting. The IDP is meant to be a tool for the student, mentors, and thesis committee to plan educational, research and career objectives on an annual basis. The primary responsibility for creating an IDP will be that of the student with the guidance of both Research and Physician Mentors. The IDP will be reviewed by the Dissertation Committee at progress meetings.
PROGRESS AFTER ADMISSION TO PH.D. CANDIDACY

Maintaining the status of Ph.D. candidacy requires:

- Maintaining a GPA of 3.0 or better
- Demonstration of adequate research progress (progress meetings are to be held at least every 9 months). **
- Annual seminar presentation (scheduled as part of CAB 701 for 2nd and 3rd year students)
- Regular seminar and CAB student dissertation defense attendance
- Participation in CAB program events and designated Sylvester Comprehensive Cancer Center events

Students in the CAB program are required to meet with their Dissertation Committee at least every 9 months in order to be considered in good academic standing. It is the student’s responsibility to organize these meetings well in advance at a time convenient for all committee members. The student’s Dissertation Committee determines satisfactory progress after admission to Ph.D. Candidacy. See QE to Defense guideline in appendix (page 44).

** For students starting their 6th year and beyond, progress will be assessed every 4½ months and this may take the form of in person meetings, written progress updates and/or other communication as stipulated by the Committee.

DISSERTATION PROPOSAL, PROGRESS REPORTS & MEETING GUIDELINES

The doctoral dissertation proposal is to be presented to the Dissertation Committee within 9 months of completing the Qualifying Exam. The specific project for doctoral research is developed by the student in consultation with the Research Mentor and with guidance from the Dissertation Committee. Typically the dissertation proposal will be a revised and updated version of the qualifying exam proposal. This document should be between 6-12 pages in length. While the proposal may originate from the ideas of the mentor, and criticisms may be freely obtained from any faculty member, the writing of the proposal is done entirely by the student. The same format as the Qualifying Exam proposal is used. Students will present their dissertation proposal to their Dissertation Committee. The student should highlight recent research progress and any changes made to the project since the Qualifying Examination. The student should demonstrate an in depth understanding of the subject matter, know the relevant literature and be aware of the capabilities and limitations of the experimental methods to be used. The student must be prepared to work closely with his/her Committee, listen to the critiques and advice of committee members and amend the proposal if necessary. Students whose dissertation proposal or defense of the proposal is judged inadequate will be required to submit a revised proposal and may need to meet again with the committee.

Students will meet with their committee at least every nine (9) months (for students in Year 6 and above see information under ‘Progress After Admission to Ph.D. Candidacy’ above about committee
meetings every 4½ months) and provide written and oral progress reports. Progress reports (6 pages) should be a clear and concise presentation of the accomplishments in the dissertation research project since the last meeting. This summary should include key points of the student’s progress and a brief overview of the project. Students are encouraged to seek the advice of their Research and Physician Mentors in completing this document, which should be submitted to the committee at least one week prior to the scheduled meeting. Note: progress reports are submitted at sufficiency meetings along with the required documents for sufficiency (see page 20).

Additional guidelines for the written progress report include:

- Summarize findings and progress since the last committee meeting.
- Describe any changes or modifications of the planned experiments and the reasons for the changes.
- Present proposed plans for the next group of experiments
- The document need not contain ALL of the experimental work since the last progress meeting but should be a selection of the work that is most important/relevant.
- At the progress meeting itself, it is acceptable to present some experimental results not included in the written progress report.
- The total length of the report is not to exceed 6 pages including figures (12 point font, single spaced). You may append any papers submitted, in press or published.

The document should be distributed as a hard copy and sent via email as a PDF to all Dissertation Committee members and the Graduate Program Coordinator no less than one week prior to scheduled meeting date. (See QE to Defense guideline and forms in appendix, page 44.)

At the end of the dissertation proposal or progress meeting the committee members will privately discuss their views regarding the student’s progress; the designated Chair will verbally relate the overall sense of the committee to the student. The Chair will draft a brief letter for review by the Dissertation Committee members for their approval. The letter should reflect the student’s experimental progress, and if deemed necessary, identify any corrective measures for unsatisfactory progress. Once the letter is approved by all members of the Dissertation Committee, the Chair will send it to the student and the CAB Program Director and Coordinator within two weeks of the meeting. The progress report and memo will be included in the student’s file.
### TIMELINE: QE to Defense Cancer Biology Graduate Program

<table>
<thead>
<tr>
<th>Oct-Dec Y2</th>
<th>Form 5 Member Dissertation Committee</th>
<th>Submit committee formation paperwork to CAB coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-Mar Y2</td>
<td>Qualifying Exam</td>
<td>Part A Write 12-page research proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Part B Oral presentation to committee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 weeks prior to meeting submit written proposal to dissertation committee</td>
</tr>
<tr>
<td>3 months later</td>
<td>Admission to Candidacy</td>
<td>Within 3 months after successful defense of thesis proposal. (See form on page 51)</td>
</tr>
<tr>
<td>9 months later</td>
<td>Dissertation Proposal Meeting</td>
<td>1 week prior to meeting provide 6-12 page written report to committee</td>
</tr>
<tr>
<td>9 months later</td>
<td>Second, Third etc. Progress Meeting</td>
<td>1 week prior to meeting provide 6 page written report to committee</td>
</tr>
<tr>
<td>TBD</td>
<td>Sufficiency Meeting</td>
<td>1 week prior to meeting provide 6 page progress report and complete sufficiency document. First author research manuscript must be submitted and reviews received at time of sufficiency. Once sufficiency is achieved, students should defend within 4 months.</td>
</tr>
</tbody>
</table>

#### Apply for Graduation

| TBD                 | Dissertation Defense                  | Submit a completed dissertation defense form (See page 60), 2 weeks prior to defense provide copy of draft dissertation. See detailed list below |

### Lack of Progress

If the Dissertation Committee determines that the student is not making satisfactory progress or that there is a consistent lack of progress, the Dissertation Committee will take appropriate action. If the student’s progress remains unsatisfactory for more than one semester, the Dissertation Committee must decide whether the student should:

1. Change his/her research project
2. Change mentors
3. Be dismissed from the graduate program

If the Dissertation Committee recommends actions 2 or 3 from the above list, the Chair must inform the CAB GPD immediately. A meeting will be scheduled to advise the student.

Unless there are exceptional circumstances (determined by the Graduate Program Director in consultation with the Steering Committee), for students starting their 6th year and beyond, progress
will be assessed every 4½ months and this may take the form of in person meetings, written progress updates and/or other communication as stipulated by the Committee. The Committee will make a determination that adequate progress towards the Ph.D is being made and will vote on the continuation of stipend support.

ATTAINING SUFFICIENCY

Sufficiency is required prior to the student’s thesis defense and graduation. Permission to write the dissertation is obtained at a meeting of the Dissertation Committee. Students will provide a six-page progress report along with a Sufficiency Meeting Document that consists of:

1) Copy of a manuscript that has been submitted for publication (for which the student is first author), and reviews from the journal received.

2) An outline of the dissertation showing the components of each chapter (a draft table of contents).

Each committee member must receive the Sufficiency Meeting Documents at least 1 week before the meeting, at which the Committee hears and discusses the student's presentation of the work. Permission to write the dissertation requires a consensus of the Committee (1 member may dissent) and will only be granted when the committee finds that all experimentation is complete. See QE to Defense guideline in the forms section (page 44).

FROM SUFFICIENCY TO DEFENSE

Once sufficiency is achieved, students should defend within four (4) months.

First Author Publication Requirement

Students are required to publish their dissertation work in high quality peer-reviewed journals. A minimum of one peer-reviewed research (not review) article, on which the student is the major contributor (first or co-first author), is required to be submitted and reviewed for sufficiency and must be accepted or published prior to the dissertation defense. The student must have actively participated in generation of the data and writing the manuscript (including any revisions).

Additional requirements for graduation include completion of the requisite number of credits of course work with a 3.0 average. With the approval of their Dissertation Committee, each student prepares a written thesis on their original research and presents a public seminar and subsequently is examined by the Dissertation Committee. The dissertation work must be approved by the committee and constitute a body of high quality original research. Once the student receives committee approval they are asked to contact the CAB Program Coordinator who will notify the Office of Graduate Studies and the Graduate School of the intent to defend and graduate. The student is responsible for applying for graduation on-line via MyUM or CANELINK in the semester they wish to graduate (which may or may not be the semester in which they defend).

The thesis constitutes both a body of research and a document deemed worthy of publication by the Dissertation Committee. During the early stages of the writing process students are strongly
encouraged to regularly discuss and consult with their mentors and to obtain feedback on all scientific issues within the document.

It is the responsibility of the graduate student to identify potential dates and times that are mutually agreeable for the Research Mentor and Dissertation Committee members. Once all members are confirmed the student must notify the CAB Program Coordinator. The Program Coordinator will notify the Office of Graduate Studies and the Graduate School.

It is essential to closely communicate with the CAB Program Coordinator during the preparation for a defense in order to advertise the defense seminar and to provide information required by the Graduate School for graduation.

**Submitting the Dissertation to the Graduate School**

In order for the student to graduate, the Graduate School must accept the dissertation. The Office of the Graduate School has a set of extremely detailed rules regarding the format of dissertations. The student should obtain the most up to date guidelines when beginning to write the dissertation. The Graduate School’s detailed dissertation guidelines may be found at: [http://www.miami.edu/gs/index.php/graduate_school/current_students/electronic_theses_dissertations/](http://www.miami.edu/gs/index.php/graduate_school/current_students/electronic_theses_dissertations/)

Please review the guidelines prior to beginning work on the dissertation and strictly adhere to them because it is the Graduate School’s ultimate decision to accept your dissertation. If the Graduate School does not accept the dissertation, the student will not be eligible to graduate in that semester.

Students are responsible for providing a hardcopy (and email PDF) of their dissertation thesis to their Research Mentor, Dissertation Committee and Graduate Program Coordinator at least two weeks before the dissertation defense.

**Thesis Defense**

Students must request approval from the Graduate Program Director to schedule their dissertation defense by completing the Approval to Schedule Dissertation Defense Form (see appendix, page 52). Prior to defense, the student must have a first-author paper accepted by an appropriate publication and the student’s committee must have approved the paper. Students must present a public seminar where they formally defend their written document in front of the Research Mentor, Physician Mentor, Dissertation Committee and the research community. The Graduate School requires that all members of the Dissertation Committee attend the seminar, private defense, and sign off on the final document. In the case of extreme, last minute emergencies the Research Mentor may consult with the Graduate Program Director to allow a single individual to be absent from the defense particularly if this individual is able to hear the public seminar and participate in the defense via Skype or teleconference.

During the private defense, the Dissertation Committee Chair is responsible for allotting appropriate time for questions by all participants. Students are expected to understand the significance of their findings, display adequate knowledge of the relevant literature and know the theory and limitations of methods employed. Candidates must demonstrate the ability to independently design, execute and
interpret original experiments. The thesis work and the oral defense must be approved by all committee members. This group is empowered to pass or fail a student’s dissertation document and/or the oral defense. The signed forms will be submitted to the Graduate School unless revisions are required. If revisions are necessary, signatures will be held until the document is revised and approved.

Graduation

Students must be registered for CAB 850 and apply for graduation via MyUM or CANELINK in the semester they plan to graduate (this may or may not be the semester in which they defend). The academic calendar has specific deadlines for graduation. It is the student’s responsibility to be aware of the exact dates and to coordinate the dissertation defense accordingly after submission of a final thesis is accepted by the Graduate School. Questions regarding deadlines, graduation fees and other requirements or regulations concerning the details of preparation and submission of the thesis dissertation should be directed to:

Doreen Yamamoto
Associate Director of Programs
Ph: (305) 284-4154
Email: grad.dissertation@miami.edu

Master of Science Degree

The CAB Graduate Program is a PhD-granting program. If a student must leave the program due to extenuating circumstances and wishes to be considered for a Master of Science degree, the student must bring this request to his/her Dissertation Committee and inform the Program Coordinator. To be eligible for a Master’s Degree, a student must be in good academic standing and should have passed the qualifying exam and produced original, scholarly work as evidenced by co-authorship on a meeting abstract and/or peer-reviewed publication. The Dissertation Committee must hold a meeting to evaluate the student’s accomplishments and the reason for leaving the program. The Dissertation Committee makes a written recommendation to the Program Director, who will, in consultation with the CAB Steering Committee, decide whether to allow the student to write the Master’s Thesis and defend it. The Master’s Thesis Committee will be comprised of the Dissertation Committee. All Master’s degree requirements (thesis document, oral defense to committee, and University paperwork) must be completed within six weeks after permission to write the thesis is granted. Upon the oral defense of the thesis, the Master’s Thesis Committee will by majority vote confer the Master’s Degree.

Dismissal and Appeals

Students can be dismissed by the Program for academic or professional reasons. Decisions on dismissal are made by majority vote of the Steering Committee. To appeal a major programmatic decision (e.g., dismissal, denial of degree, termination of stipend), students should first present their reasons for appealing to the Program Director and Steering Committee. This appeal will be given a fair and impartial hearing followed by a decision made by majority vote. If the student remains dissatisfied with the result of this appeal, s/he may appeal the program decision, in writing, to the Senior Associate Dean for Graduate Studies, within 30 days of the program's final decision. Decisions by the Senior Associate Dean are appealable to the Dean of the Graduate School.
Readmission Policy to PhD Programs

Programs may readmit former students under the following conditions. 1) The student must have left the program in “Good Academic Standing” 2) The student must identify a mentor willing to take him/her into the lab and to provide full financial support. All Graduate School policies and program policies apply. Additionally, the Graduate School readmission policy states:

Unless a leave of absence has been requested and approved, students who have not been continuously enrolled for sessions must request readmission. Contact the appropriate program office well in advance of registration. If additional college work has been completed elsewhere since the last enrollment at the University of Miami, an official transcript of this will be required. Recency of credit rules will apply.

RESPONSIBLE CONDUCT OF RESEARCH

In order to foster face-to-face discussions among Cancer Biology (CAB) graduate students and Sylvester Cancer Center Post-doctoral fellows, the CAB program will host an annual mandatory responsible conduct of research workshop during the student seminar time slot. A combination of didactic and small-group discussions (e.g. case studies) will be used in the instruction of responsible conduct of research.

Discussion Topics will include:

- Conflict of interest – personal, professional, and financial
- Policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices
- Mentor/mentee responsibilities and relationships
- Collaborative research including collaborations with industry
- Peer review
- Data acquisition and laboratory tools; management, sharing and ownership
- Research misconduct and policies for handling misconduct
- Avoiding plagiarism
- Responsible authorship and publication
- The scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research

Additionally, the evaluation of responsible conduct of research practices will be an integral part of each committee meeting. See form on page 56.

SEMINARS AND MEETINGS

CAB graduate students are expected to attend the following:

Sylvester Program Meetings

Depending on their choice of research advisor, pre-doctoral trainees will be assigned to one of three
Sylvester interdisciplinary programs (Cancer Prevention, Control & Survivorship Program, Tumor Biology Program, and Cancer Epigenetics Program). These programs meet on a monthly basis and trainees are encouraged to attend.

**Sylvester Distinguished Guest Lecture Series**

This lecture series provides a forum for outstanding clinical and translational researcher guest lecturers to interact and ultimately collaborate with Sylvester faculty. The focus of the series is to bring basic science and clinical researchers together to discuss recent advances in the understanding and treatment of human cancer – a realization of the “bench to bedside” ideal. The audience is typically a mix of clinicians, clinical researchers, basic and physician scientists, graduate students and post-doctoral trainees.

**Annual Zubrod Memorial Lecture and Cancer Research Poster Session**

Graduate Students are expected to attend the Annual Zubrod Memorial Lecture and participate in the Cancer Research Poster Session. This symposium is an annual day-long event in which Sylvester clinical investigators and trainees, pre- and postdoctoral fellows present results of their research in poster fashion. Outstanding posters presented by students and postdoctoral fellows are ranked for scientific merit and cited by an independent panel and acknowledged at the Symposium. Second year pre-doctoral and postdoctoral trainees are encouraged to present posters related to ongoing or completed research at the annual poster session.

**ANNUAL MEETING ATTENDANCE AND TRAVEL AWARDS**

Students are encouraged to present their work at domestic national meetings. The CAB program has limited funds to help defray the cost for students to attend one annual meeting per calendar year at which they are first author on an abstract and will present a talk or poster (see page 61 – for form). Such requests should be submitted to the CAB Program Coordinator at least 6 weeks prior to the meeting date. Requests will be reviewed on a case-by-case basis. In addition, Sylvester pre-doctoral trainees will be asked to prepare presentations for and participate in the Annual Eastern Student Research Forum held at the University of Miami, which is staffed and organized by graduate students from the University of Miami Basic Science departments.

Please note that the Medical Faculty Association (MFA) Travel Awards are offered by the Office of Graduate Studies (typically to senior students). Students are encouraged to apply for this award as well. The MFA Margaret Whelan Travel Awards are given twice per academic year: Fall and Spring. Announcements will be sent out approximately one month in advance of the deadline (exact dates will vary) for each cycle.

**ACKNOWLEDGEMENT OF CAB PROGRAM**

When students submit abstracts to conferences and papers for submission to journals, please acknowledge the CAB Program as follows: [Student name] acknowledges partial support and assistance from the Sheila and David Fuente Graduate Program in Cancer Biology, Sylvester Comprehensive Cancer
Center. For talks, please also acknowledge the “Sheila and David Fuente Graduate Program in Cancer Biology.”

**PLAGIARISM**

Plagiarism is "the appropriation or imitation of the language, ideas and thoughts of another author, and representation of them as one's original work."\(^1\) It is explicitly outlawed at UMMSM, and each Ph.D. student who enters our programs signs a statement acknowledging this fact. **The CAB program will not tolerate plagiarism.** Nevertheless, cases of student plagiarism do occur, either in our courses, qualifying exams, dissertation proposals, progress reports or dissertation. Such cases may be handled by faculty to whom responsibility is delegated, such as course directors or graduate mentors. However, each case in which plagiarism has been found to occur (along with the disposition of the case) must be reported to the director of the graduate program in which the offending student is enrolled (or the PIBS director, for first-year PIBS students). The Graduate Program Director, in turn, will report each instance at a meeting of the Graduate Program Directors (GPDs) with the Associate Dean for Graduate Studies. The GPDs will evaluate each case to determine if the measures to be taken are appropriate.

\(^1\) Random House Dictionary of the English Language, 1967

**WORKDAY**

Workday is UM’s interactive one-stop information hub for personalized, university-related information for students, faculty, and staff. To log in and view or make changes to any information, go to [http://workday-hr.it.miami.edu/](http://workday-hr.it.miami.edu/)

**STIPEND**

All graduate students in good academic standing will receive an annual stipend of $28,500 for FY 2018 and **may not be employed elsewhere.** Payroll assignments and details will be managed by the Cancer Biology Graduate Program Coordinator. Students are paid on the last day of each month and are required to have direct deposit.

**TUITION SCHOLARSHIPS**

All graduate students in good academic standing will also receive a tuition scholarship for the duration of their studies. The Cancer Biology Graduate Program Office will submit the appropriate registration and tuition waiver information on behalf of the student to the Office of the Registrar and the Office of Financial aid each semester.

**E-MAIL AND CALDER LIBRARY**

UM provides free e-mail accounts to all students; please be sure to read your e-mail daily. If you do not have e-mail, please contact the Program Coordinator to get University Access. E-mail is an important avenue of communication between the Cancer Biology Program and the graduate students. The Calder Library (just behind RMSB) is a great resource for information and courses on how to use scientific information tools. Check out [http://calder.med.miami.edu/](http://calder.med.miami.edu/) for more information.
HEALTH INSURANCE

Graduate Student Health Insurance Coverage for 2017-2018

The University of Miami will cover 100% of graduate student’s health insurance premiums. Coverage dates are from August 15, 2017 to August 14, 2018

Graduate Students in good academic standing who elect the University of Miami sponsored health insurance program will have 100% of the individual premium paid for by their mentor. All students are required to show proof of adequate health insurance or will be required to enroll in the health insurance plan sponsored by the University. Please note that International Students are required to obtain the University of Miami sponsored health insurance. Graduate students may purchase coverage for their dependents; charges are paid directly to the Student Health Service. For more detailed information contact the Student Health Center at (305) 284-1652.

Health insurance is required by all students and students who obtain their own insurance or are covered by parents or spouse are required to complete the appropriate waiver form. This policy must provide the same benefits equal to those required by the University.

Students scheduled to graduate at the end of the Fall semester can request to be covered for the Fall semester only by completing the appropriate paperwork which can be found on the Health Center’s website http://studenthealth.studentaffairs.miami.edu/insurance-information/insurance-forms-brochure/index.html Students who request to be charged for the Fall only, and remain enrolled, will be subject to the Spring/Summer insurance fee.

HEALTH INSURANCE INFORMATION FOR DOMESTIC STUDENTS

Domestic students enrolled in six or more credit hours per semester (or considered full time, including graduate students enrolled in a 700/800 level class) are required to obtain adequate health insurance.

Domestic students with adequate alternative coverage may request to waive the University sponsored insurance. For more information on this please visit http://studenthealth.studentaffairs.miami.edu/insurance-information/domestic-students/index.html Students with limited out of area coverage or otherwise inadequate coverage are urged to carefully review their options before waiving the Student Health Service sponsored insurance plan. Deadlines to waive the insurance are available on the University of Miami Student Health Center website at http://www.miami.edu/sa/index.php/student_health_center. Insurance cancellation and any registration requests must be renewed each academic year via CaneLink.

HEALTH INSURANCE FOR INTERNATIONAL STUDENTS

All international students are required to enroll in the University sponsored health insurance program. Optional coverage for dependents can be requested at the time the student is first able to
enroll in the plan (within 14 days of the start of the semester) or within 30 days of termination of other similar coverage, or because of any of the following events; birth, legal adoption, placement for adoption, marriage, legal guardianship, or court or administrative order. Renewal of dependent coverage is the responsibility of the student / dependent and must be requested prior to the termination of the current policy in order to prevent a lapse in coverage. Late requests for renewal must be received within 14 days of the start of the semester. Charges are paid directly to the Student Health Service, payment by credit card is preferred. For more information, contact the Student Health Service at http://www.miami.edu/sa/index.php/student_health_center or (305) 284-1652.

INTERNATIONAL STUDENT AND SCHOLAR SERVICES

The Department of International Student and Scholar Services (ISSS) provides support services for international students and scholars. ISSS offers the following support services: immigration advising, orientation, employment information and authorization, federal income tax filing, personal and adjustment problems, advocacy and liaison (sponsors). A special orientation program is held in the Fall for all new international students to facilitate the educational and cultural adjustment of new and transfer international students.

For more information contact ISSS:
Phone: (305) 284-2928   Email: Isss@miami.edu   Web: www.miami.edu/internationalservices/
Address: 560 Merrick Drive, Bldg. 21-F, Coral Gables, FL 33124-5550

LEAVE/ VACATION FOR PH.D. STUDENTS

This statement applies to full time PhD students in good academic standing at the University of Miami, Miller School of Medicine (UMMSM). In general, trainees may receive stipends during the normal holiday periods observed by UMMSM (New Year’s Day, M.L. King’s Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day after, and Christmas Day). PhD students may also receive stipend support for up to 15 calendar days of sick leave per year. PhD students may also receive stipends for up to 30 calendar days of parental leave per year for the adoption or birth of a child, if the use of parental leave is requested from the Program Director. PhD students are also permitted to receive stipend support during a reasonable number of vacation days. The exact number and timing of vacation days is negotiated between student and mentor, but vacation days are normally expected to be no more than 2 weeks per year (10 business days).

Graduate School Policy on Childcare Accommodation

The Graduate School recognizes that doctoral students receiving a stipend from a fellowship, teaching or research assistantship may require a paid leave of absence due to pregnancy or the need to care for a new child. The process to secure the leave should follow the steps described below:
1. Graduate students must apply for a leave using the leave of absence form. This form, available on the graduate school website, should be submitted one semester before the intended start of the leave, if at all possible.

2. The length of the paid leave of absence should not exceed a total of three months. Any student requesting a longer period of leave may be granted an unpaid leave of absence.

3. Any accommodations and funding required during the leave must be provided by the academic home school/college, department or program. This is particularly important if the student is the recipient of a research assistantship from a federal grant (NSF, NIH, DOE, DoD, etc...) or an external fellowship without maternity/paternity leave stipulations, since a student cannot keep receiving stipend payments from these sources during the leave of absence.

4. Requests to extend the leave of absence beyond three months can be made only due to medical reasons during the leave period and require the submission of proper documentation. Any leave extensions may be granted as unpaid leaves of absence.

5. The time spent on leave of absence due to childcare accommodation will not count against the student’s academic time-to-completion in the corresponding graduate program

6. During the graduate tenure a given student can only benefit once from this policy.

7. On a case by case basis, the Graduate School may consider two doctoral students for co-parenting the same child and the conditions of the accommodation will vary. Requests can be directed to the Dean of the Graduate School

8. Any other cases not contemplated in this document should be directed for consultation by the Dean of the Graduate School.

Once a student returns from an approved leave, he/she will need to submit an application for readmission form. If the student returns within the approved leave time frame, the Graduate School will simply approve. If the student returns outside of the approved length of time, the readmission form will be reviewed. Please visit [http://biomed.miami.edu/current-studentsacademic-policies/leave-of-absence-vacation-policy](http://biomed.miami.edu/current-studentsacademic-policies/leave-of-absence-vacation-policy) for the most updated version of this policy.

**Change in Graduate Student Holidays (Revised November 2015)**

The Graduate Program Directors voted to support the Coral Gables campus holiday schedule instead of the Medical campus schedule. As a result, 4 additional days (the day after Thanksgiving, Christmas Eve, the day after Christmas, and New Year’s Eve) were added to the list of holidays for Graduate Medical PhD students.
Individuals requiring periods of time away from their research training experience longer than specified here must seek approval from their Program Director for an **unpaid** leave of absence. At the beginning of a leave of absence, the trainee must submit a written request which includes the reason for the request as well as the date the leave will begin and end. This request, once approved by the Program Director, should be submitted to the Office of Graduate Studies which will seek the necessary approval from the Senior Associate Dean.

**STUDENT COUNSELING CENTER**

The University Student Counseling Center has personal counselors who can help students effectively cope with the challenges of college life and facilitate learning, growing, and socializing. The Counseling Center offers a wide range of services, including short-term individual counseling, career and educational counseling, outreach programs, and various groups aimed at enhancing personal growth and development. The center is staffed by an experienced team of professionals from the fields of psychology, psychiatry, mental health counseling and social work. Students can contact the center by calling (305) 284-5511. The Medical Campus has a dedicated counselor – Dr. Addys Karunaratne. She is located in the Don Soffer Clinical Research Building, Room 931. If a crisis occurs after hours counselors can be reached by calling the University of Miami Police department at (305) 284-6666.

**SECURITY (305) 243-6000**

The UM Medical Campus provides security to monitor building entrances and patrol the campus 24 hours a day. If you are working late or on weekends security officers will provide escorts upon request to any point on the medical campus including Metrorail. Call medical campus security at (305) 243-6000 or 6-6000 or *711 on in-house phones.

**METRORAIL PASSES**

The Miami-Dade Metrorail is an elevated rapid transit system that runs through Miami and provides convenient access to the medical school at Civic Center Station exit. Discounted monthly Metrorail passes are available to UM students and must be ordered a month in advance. To order a pass contact the Security Office at (305) 243-6280 or UMParking@med.miami.edu

**PARKING**

The UM Security Office is responsible for issuing parking lot access for faculty, staff, and students. However, since parking space is limited there is usually a waiting list. To place your name on a waiting list for a particular parking garage contact Daysi Fleitas at (305) 243-6280, ext. 2 or email: Umparking@med.miami.edu. The Dominion parking garage is privately owned and usually has available parking. Call (305) 324-0900 or walk over to the office at Dominion Tower (1400 NW 10th Avenue, Suite 101).
THE GRADUATE STUDIES BULLETIN

The official rules of the University regarding the Doctor of Philosophy degree are published each year in the Graduate Studies Bulletin. Students should read and adhere to these rules. www.miami.edu/umbulletin
RESEARCH MENTOR AREA OF INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Michael Antoni, Ph.D.
Professor, Psychology and Psychiatry

Sulagna Banerjee, Ph.D.
Assistant Professor, Biochemistry & Molecular Biology

Glen Barber, Ph.D.
Professor and Chair, Cell Biology and Anatomy

Julio C. Barredo, M.D.
Professor, Pediatrics, Medicine, Biochemistry & Molecular Biology
Director, Division of Pediatric Hematology/Oncology
Director, Children's Cancer Programs, Sylvester Comprehensive Cancer Center

Nanette Bishopric, M.D.
Professor, Medicine (Cardiology), Molecular and Cellular Pharmacology, Pediatrics

Marzenna Blonska, Ph.D.
Assistant Professor, Medicine

Karoline Briegel, Ph.D.
Research Associate Professor, Surgery

Kerry Burnstein, Ph.D.
Professor, Molecular and Cellular Pharmacology
Associate Director for Education & Training, Sylvester Comprehensive Cancer Center

Xiaodong Cai, Ph.D.
Associate Professor, Electrical and Computer Engineering

Anthony Capobianco, Ph.D.
Professor, Surgery

Zhibin Chen, M.D., Ph.D.
Associate Professor, Microbiology & Immunology

Richard J. Cote, M.D., FRCP, FCAP
Professor and Chair, Pathology

Firdaus Dhabhar, Ph.D.
Professor, Psychiatry

Shanta Dhar, Ph.D.
Associate Professor, Biochemistry & Molecular Biology
Assistant Director of Technology Innovation, Sylvester Comprehensive Cancer Center
RESEARCH MENTOR AREA OF INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Vikas Dudeja, M.D.
Assistant Professor, Surgery

Maria Figueroa, M.D.
Associate Professor, Human Genetics

Elizabeth Franzmann, M.D.
Associate Professor, Otolaryngology

Sophia George, Ph.D.
Research Assistant Professor of Obstetrics and Gynecology

Eli Gilboa, Ph.D.
Professor, Microbiology and Immunology

James William Harbour, M.D.
Professor and Vice Chairman, Ophthalmology

Jennifer Hu, Ph.D., MPH
Professor, Epidemiology and Public Health

Barry I. Hudson, Ph.D.
Assistant Professor, Cell Biology

Tan Ince, M.D., Ph.D.
Associate Professor, Pathology

Adrian S. Ishkanian, M.D.
Assistant Professor, Radiation Oncology

Roland Jurecic, Ph.D.
Associate Professor, Microbiology and Immunology, Cell Biology and Anatomy

Noriyuki Kasahara, M.D., Ph.D.
Professor, Cell Biology and Pathology

Wasif N. Khan, Ph.D.
Professor, Microbiology and Immunology

Erin Kobetz, Ph.D., M.P.H.
Associate Professor, Medicine
Senior Associate Dean for Health Disparities

Krishna Komanduri, M.D.
Professor, Medicine, Microbiology and Immunology
RESEARCH MENTOR AREA OF INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Theodore Lampidis, Ph.D.
Professor, Cell Biology and Anatomy

Ralf Landgraf, Ph.D.
Associate Professor, Biochemistry and Molecular Biology
Program Director, Sheila & David Fuente Graduate Program in Cancer Biology

Stephen Lee, Ph.D.
Professor, Biochemistry and Molecular Biology

Sandra Lemmon, Ph.D.
Professor, Molecular and Cellular Pharmacology

Robert Levy, Ph.D.
Professor, Microbiology and Immunology

Jie Li, M.D., Ph.D.
Associate Professor, Dermatology and Cutaneous Surgery, Cell Biology and Anatomy

Marc E. Lippman, M.D.
Professor, Medicine
Deputy Director, Sylvester Comprehensive Cancer Center

Zhao-Jun Liu, M.D., Ph.D.
Associate Professor, Surgery

Diana Lopez, Ph.D.
Professor, Microbiology and Immunology

Izidore Lossos, M.D.
Professor, Medicine (Hematology/Oncology), Molecular and Cellular Pharmacology

Jaime Merchan, M.D., MMSc.
Associate Professor, Medicine (Hematology/Oncology)

Nipun Merchant, M.D., F.A.C.S.
Professor, Surgery

Enrique Mesri, Ph.D.
Professor, Microbiology and Immunology

Lluis Morey, Ph.D.
Research Assistant Professor, Human Genetics
RESEARCH MENTOR AREA OF INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Zafar Nawaz, Ph.D.
Professor, Biochemistry and Molecular Medicine

Stephen D. Nimer, M.D.
Professor, Medicine, Biochemistry and Molecular Biology
Director, Sylvester Comprehensive Cancer Center

Xin-Hai Pei, M.D., Ph.D.
Assistant Professor, Surgery

Alan Pollack, M.D., Ph.D.
Professor and Chair, Radiation Oncology

Priyamvada Rai, Ph.D.
Associate Professor, Medicine (Hematology/Oncology)

Sundaram Ramakrishnan, M.Sc., Ph.D.
Professor, Surgery

David Robbins, Ph.D.
Professor, Surgery (Oncology)

Joseph D. Rosenblatt, M.D.
Professor, Medicine
Chief, Hematology/Oncology

Sabita Roy, Ph.D.
Professor, Surgery

Ashok Saluja, Ph.D.
Professor and Vice Chairman, Surgery

Niramol Savaraj, M.D.
Professor, Medicine (Hematology/Oncology)

Jonathan H. Schatz, M.D.
Professor, Medicine (Hematology/Oncology)

Michael S. Schmale, Ph.D.
Professor, Marine Biology and Ecology

Noula Shembade, Ph.D.
Assistant Professor, Microbiology and Immunology
RESEARCH MENTOR AREA OF INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Ramin Shiekhattar, Ph.D.
Professor, Human Genetics and Biochemistry, Molecular Biology

Joyce Slingerland, M.D., Ph.D., F.R.C.P.(C)
Professor, Medicine (Hematology/Oncology), Biochemistry and Molecular Biology
Director, Braman Family Breast Cancer Institute

Emmanuel Thomas, M.D., Ph.D.
Assistant Professor, Cell Biology

Marta Torroella-Kouri, Ph.D.
Associate Professor, Microbiology and Immunology

Jonathan C. Trent, M.D., Ph.D.
Professor, Medicine (Hematology/Oncology)

Francisco Vega-Vazquez, M.D., Ph.D.
Professor, Pathology

Ramiro E. Verdun, Ph.D.
Assistant Professor, Medicine

Claes Wahlestedt, Ph.D.
Professor of Psychiatry & Behavioral Sciences
Associate Dean for Therapeutic Innovation
Director, Center for Therapeutic Innovation

Keith Webster, Ph.D.
Professor, Molecular and Cellular Pharmacology

Scott Welford, Ph.D.
Associate Professor, Radiation Oncology

Athula Wikramanayake, Ph.D.
Professor, Biology
Chair, Department of Biology

Mingjiang Xu, M.D., Ph.D.
Associate Professor, Biochemistry & Molecular Biology

Xiangxi (Mike) Xu, Ph.D.
Professor, Cell Biology and Anatomy

Feng-Chun Yang, M.D., Ph.D.
Professor, Biochemistry & Molecular Biology
RESEARCH MENTOR AREA OF INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Arthur Z. Zelent, Ph.D.
Professor, Medicine

Fangliang Zhang, Ph.D.
Assistant Professor, Molecular and Cellular Pharmacology
PHYSICIAN MENTOR AREA OF RESEARCH INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Nicolas Acquavella Pesantes, M.D.
Doctor of Medicine (Hematology/Oncology)

Eli Avisar, M.D.
Associate Professor, Clinical Surgery

Julio C. Barredo, M.D.
Professor, Pediatrics
Director, Pediatric Hematology/Oncology
Director, Sylvester Children's Cancer Programs

Pasquale W. Benedetto, M.D.
Leonard Miller Professor, Medicine

Ronald Benveniste, M.D., Ph.D.
Associate Professor, Clinical Neurosurgery

Nanette Bishopric, M.D.
Professor, Medicine (Cardiology), Molecular and Cellular Pharmacology, Pediatrics

Richard J. Cote, M.D., FRCPath, FCAP
Professor and Chair, Pathology

Gary H. Danton, M.D., Ph.D.
Associate Professor, Clinical Radiology

Vikas Dudeja, M.D.
Assistant Professor of Surgery

Lynn Feun, M.D.
Professor, Medicine (Hematology/Oncology)

Elizabeth Franzmann, M.D.
Associate Professor, Otolaryngology

Parvin Ganjei-Azar, M.D.
Professor, Pathology

Carmen Gomez-Fernandez, M.D.
Professor, Clinical Pathology

Mark L. Gonzalgo, M.D., Ph.D.
Professor, Urology
PHYSICIAN MENTOR AREA OF RESEARCH INTEREST
(To learn more about the CAB Graduate Faculty click on link)

James William Harbour, M.D.
Professor and Vice Chairman, Ophthalmology

Adrian S. Ishkanian, M.D.
Assistant Professor, Radiation Oncology

Merce Jorda, M.D., Ph.D.
Professor, Clinical Pathology

Krishna Komanduri, M.D.
Professor, Medicine (Hematology/Oncology) Microbiology and Immunology

Brian E. Lally, M.D.
Assistant Professor, Radiation Oncology

Lazaros Lekakis, M.D.
Associate Professor, Clinical Medicine

Silvina Levis-Dusseau, M.D.
Professor, Medicine (Geriatrics)

Jie Li, M.D., Ph.D.
Associate Professor, Dermatology and Cutaneous Surgery, Cell Biology and Anatomy

Marc E. Lippman, M.D.
Kathleen and Stanley Glaser Professor, Medicine

Izidore Lossos, M.D.
Professor, Medicine (Hematology/Oncology), Molecular and Cellular Pharmacology

Jaime Merchan, M.D., MMSc
Associate Professor, Clinical Medicine

Dao Nguyen, M.D, MSc., FRCSC, FACS
Professor and Chief, Thoracic Surgery Section

Stephen D. Nimer, M.D.
Professor, Medicine, Biochemistry and Molecular Biology
Director, Sylvester Comprehensive Cancer Center

Dipen J. Parekh, M.D.
Professor and Chairman, Urology
PHYSICIAN MENTOR AREA OF RESEARCH INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Dennis Patin, M.D.
Associate Professor, Clinical Anesthesiology

Alan Pollack, M.D., Ph.D.
Professor and Chair, Radiation Oncology

Sanoj Punnun, M.D.
Professor of Medicine (Hematology/Oncology)

Juan Carlos Ramos, M.D.
Assistant Professor, Clinical Medicine

Chad R. Ritch, M.D., M.B.A.
Assistant Professor, Urology

Joseph D. Rosenblatt, M.D.
Professor, Medicine
Chief, Hematology-Oncology

Niramol Savaraj, M.D.
Professor, Medicine (Hematology/Oncology)

Jonathan H. Schatz, M.D.
Professor, Medicine (Hematology/Oncology)

Joyce Slingerland, M.D., Ph.D. FRCP(C)
Professor, Medicine (Hematology/Oncology)
Director, Braman Family Breast Cancer Institute

Brian M. Slomovitz, M.D.
Obstetrics and Gynecology

Ronan T. Swords, M.D., Ph.D., FRCPI, FRCPath
Assistant Professor, Medicine (Leukemia)

Emmanuel Thomas, M.D., Ph.D.
Assistant Professor, Cell Biology

Jonathan C. Trent, M.D., Ph.D.
Professor, Medicine (Hematology/Oncology)

Francisco Vega-Vazquez, M.D., Ph.D.
Professor, Pathology
PHYSICIAN MENTOR AREA OF RESEARCH INTEREST
(To learn more about the CAB Graduate Faculty click on link)

Justin Watts, M.D.
Assistant Professor, Clinical Medicine

Breelyn Wilky, M.D.
Assistant Professor, Internal Medicine, Hematology/Oncology

Aaron H. Wolfson, M.D.
Professor and Vice Chair, Radiation Oncology
IMPORTANT CONTACTS

CAB Graduate Program Contacts
   Ralf Landgraf, Ph.D.                (305) 243-5815
   Graduate Program Director

   Sarah Sandiford                (305) 243-2287
   Graduate Program Coordinator

Student Health Services  (studenthealth@miami.edu)
   Health Center                (305) 284-9100
   Health Insurance            (305) 284-1652
   Immunization               (305) 284-5933

Crisis Prevention Center
   Counseling Center             (305) 284-5511
   Switchboard of Miami         (305) 358-4357 (HELP)
   Employee Assistance Program  (305) 284-6604
   Hurricane Hotline            (305) 284-5151

Toppel Career Center        (305) 284-5451

Graduate School
   Ph.D. Candidacy                (305) 284-4154
   Associate Director of Programs (305) 284-4154

Office of Graduate Studies   (305) 243-6406
Sheila and David Fuente
Graduate Program in Cancer Biology

FORMS

Dissertation Committee Approval Form  Page 43
Timeline: QE to Defense  Page 44
Independent Development Plan  Page 46
Qualifying Exam Written Proposal Format  Page 49
Application for Admission to Candidacy Form  Page 51
Progress Meeting Report Format & Guidelines  Page 52
Evaluation Form (Rubric) for All Meetings  Page 54
Responsible Conduct of Research Checklist  Page 56
Student Seminar Abstract Template  Page 58
Student Seminar Evaluation  Page 59
Approval to Schedule Dissertation Defense Form  Page 60
Travel Reimbursement Request Form  Page 61
Faculty Support Letter for Travel  Page 62
The CAB Dissertation Committee consists of five members: (1) Research Mentor, (1) Physician Mentor and (3) committee members; two must be University of Miami CAB graduate faculty members. One graduate faculty member can be from another program (not CAB) but must be a University of Miami graduate faculty member.

CAB Graduate Student: _____________________________________________

Research Mentor: _________________________________________________ (CAB research member)

Physician Mentor: ________________________________________________ (CAB physician member)

Names of Three Dissertation Committee Members:

1. ___________________________________________ (CAB research member)
2. ___________________________________________ (CAB research member)
3. ___________________________________________ (CAB or UM graduate faculty member)

(Committee Chair will be selected at QE)

Student Signature: ___________________________________________ DATE: ________

Research Mentor Signature: ____________________________________ DATE: ________

Graduate Program Director Signature: _____________________________ DATE: ________

Ralf Landgraf, Ph.D.

After all signatures are obtained email a copy of this form to:

CAB Graduate Program Coordinator
Sarah Sandiford. sis324@med.miami.edu  (305) 243-2287
Office: Dominion Tower, 1400 NW 10th Ave., Suite 412, Miami, FL 33136

Updated: 09/15/17 SS
**TIMELINE: QE to Defense Cancer Biology Graduate Program**

<table>
<thead>
<tr>
<th>Oct-Dec Y2</th>
<th>Form 5 Member Dissertation Committee</th>
<th>Submit committee formation paperwork to CAB coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-Mar Y2</td>
<td>Qualifying Exam</td>
<td>Part A Write 12-page research proposal</td>
</tr>
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<td>Part B Oral presentation to committee</td>
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<td>2 weeks prior to meeting submit written proposal to dissertation committee</td>
</tr>
<tr>
<td>3 months later</td>
<td>Admission to Candidacy</td>
<td>Within 3 months after successful defense of thesis proposal. (See form on page 47)</td>
</tr>
<tr>
<td>9 months later</td>
<td>Dissertation Proposal Meeting</td>
<td>1 week prior to meeting provide 6-12 page written report to committee</td>
</tr>
<tr>
<td>9 months later</td>
<td>Second, Third etc. Progress Meeting</td>
<td>1 week prior to meeting provide 6 page written report to committee</td>
</tr>
<tr>
<td>TBD</td>
<td>Sufficiency Meeting</td>
<td>1 week prior to meeting provide 6 page progress report and complete sufficiency document. <strong>First author research manuscript must be submitted and reviews received at time of sufficiency.</strong> Once sufficiency is achieved, students should defend within 4 months.</td>
</tr>
<tr>
<td>TBD</td>
<td>Dissertation Defense</td>
<td>Submit a completed dissertation defense form (See page 54), 2 weeks prior to defense provide copy of draft dissertation. See detailed list below</td>
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</table>

**BEFORE YOU DEFEND**


A minimum of one peer-reviewed research (not review) article, on which the student is the major contributor (first or co-first author), is required to be submitted and reviewed in order to schedule a sufficiency meeting and either accepted or published prior to dissertation defense. *(Please acknowledge the Sheila and David Fuente Graduate Program in Cancer Biology on all papers, abstract, posters, etc.)*

**SUBMIT DEFENSE ANNOUNCEMENT FORM One Month Prior to Defense**

Provide ABSTRACT, DISSERTATION TITLE and DATE to CAB COORDINATOR who will submit the Defense Announcement form.

**Thesis Defense Seminar**

Students must present a public seminar and be examined by Research Mentor, Physician Mentor and Dissertation Committee.

____ Provide short personal bio and abstract for dissertation program.

____ Research Mentor will introduce CAB graduate student.
Dissertation Defense

____ Apply for Graduation in the appropriate semester (this may or may not be the semester in which the student defends)
____ Certificate of Defense Approval
____ Evaluation Forms (CAB Coordinator will provide)
____ Thesis Signature Page – all committee members must sign
____ External Examiners: CAB does not require external examiners for dissertation defenses; however, there is nothing to prohibit a mentor from inviting an external examiner, at their expense, to attend the dissertation seminar and defense.
PART 1.  Progress Review: Research and Professional Training in the Past Year

Brief overview of your research project and major accomplishments in the past year (one half page should be sufficient):

- Publications:

- Patents:

- Honors/Awards (include fellowships with entire funding periods, grants written/applied for/received, professional society presentation awards or travel awards, etc.):
• **National or professional meetings attended** (indicate meeting title, oral or poster presentation):

• **Seminar Presentations** (title, department):

• **New areas of research or technical expertise acquired in past year**:

• **Teaching activity**:

  Oversight of undergraduate or summer student (name, academic level, project title):

  **Course lectures** (department, course name) or lab sections (section title, supervised/unsupervised):

  • **Clinical activity**:

  • **Responsible Conduct in Research Training**:

  • **Committee or other service activity (indicate if you held an office)**:

  • **Other professional activities not identified above**:

  • **Other activities (community, etc.) with professional relevance**:

---

**Part 2. Plans for the Up-coming year:**

**Research and other training plans:**

Describe research project goals (brief paragraph):

• **Anticipated publications (indicate projected titles)**:

  • **Anticipated meeting or workshop attendance**:
• Fellowship or other funding applications planned (indicate name of award):

• Other professional training (course work, teaching activity):

Career Goals:

• Current career goal(s):
  1)
  2)

• What further research activity or other training is needed before it is appropriate to start a job search?

• When do you anticipate beginning a job search?

• Please indicate if there are other issues that affect your job search (an international trainee with an assured position in home country):

Last updated: 11/10/16 SS
### Part I – Format for QE Cover Page

(This is a template graduate students don’t have to use this form but must provide all information listed – follow instructions)

<table>
<thead>
<tr>
<th>NAME (last, first, middle initial)</th>
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<tbody>
<tr>
<td>TITLE OF PROPOSAL</td>
</tr>
<tr>
<td>RESEARCH MENTOR (last, first, middle initial) (CAB Research Member)</td>
</tr>
<tr>
<td>PHYSICIAN MENTOR (last, first, middle initial) (CAB Physician Member)</td>
</tr>
</tbody>
</table>

#### DISSEETATION COMMITTEE

(Alphabetize by last name. Please include the committee members department of affiliation)

**Dissertation Committee Members** (Two must be CAB members, one can be non-CAB)

1. (CAB Research Member)
2. (CAB Physician Member)
3. (Three CAB or UM graduate faculty members)

#### DATE/TIME/LOCATION OF ORAL QUALIFYING EXAM

This document was written entirely by the student and includes at least one original aim (or several original subaims).

RESEARCH MENTOR SIGNATURE _____________________________
Part II – Abstract for QE Research Proposal

Abstract / Description: State the broad, long-term objectives and specific aims of the research proposal, making reference to the health relatedness of the project (if such exists). Describe concisely the research design and methods for achieving these goals. (Generally no more than half a page)

Part III – Body of Research Proposal

Research Proposal: The document should be well formulated and presented in sufficient detail that it can be evaluated for its scientific merit. Mentors may provide feedback but the document is to be written solely by the graduate student. Include sufficient information to permit an effective evaluation without faculty having to refer to the literature citations. Brevity and clarity in the presentation are considered indicative of a student’s approach and ability to conduct an exceptional project. Use of schematics, diagrams and flow charts are encouraged. The document (sections 1-5) is not to exceed 12 pages [this includes all tables and figures, single-spaced, 12 point font, at least 0.5 inch margins, Arial, Helvetica, Palatino Linotype or Georgia typeface]. Below is the format:

Specific Aims: State the specific purpose(s) of the research proposal and the hypotheses to be tested. (Generally 1 page)

Background and Significance: Provide the background to the proposal. State concisely the importance of the research described in this application by relating the specific aims to broad, long-term objectives. (Generally 2-3 pages)

Preliminary Results (Generally 1-2 pages)

Research Design and Methods: Provide a description of the research design of the experiments proposed and the procedures to be used to accomplish the specific aims. Normally, this section is laid out in the order of the specific aims. For each specific aim, describe the proposed experiments including controls. Describe the major experimental techniques and methodologies you plan to use. Do not provide detailed descriptions of standard models. Describe the rationale for the choice of methods as well as potential problems or limitations. Explain how problems and limitations will be dealt with for each specific aim. Discuss the anticipated results of the proposed experiments (include alternative possibilities), and how they will be interpreted. How will the anticipated results support or disprove your hypothesis? Include any statistical methods by which the data will be analyzed. You may want to include a tentative time table for the proposed experiments. (Generally 5-7 pages)

Literature Citations: Insert these at the end of the research proposal. Each citation MUST include names of all authors, the complete title, book or journal, volume number, page numbers (beginning and end), and year of publication. The citations ARE NOT part of the 12 page limit.

Format and guidelines adapted from NIH and UMMSM Microbiology & Immunology Program.
Form found online at: [https://umshare.miami.edu/web/wda/grad/forms_/web/admission_to_candidacy.pdf](https://umshare.miami.edu/web/wda/grad/forms_/web/admission_to_candidacy.pdf)
Progress Meeting Report Cover Page and Guidelines
(graduate students do not have to use this form but must include all information below – follow instructions)

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<thead>
<tr>
<th>CAB Graduate Student Name (last, first, middle initial)</th>
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<th>DATE/TIME/ LOCATION OF SCHEDULED PROGRESS MEETING</th>
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<th>RESEARCH MENTOR (last, first, middle initial) (CAB Research Member)</th>
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<th>PHYSICIAN MENTOR (last, first, middle initial) (CAB Physician Member)</th>
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<tr>
<th>DISSERTATION COMMITTEE</th>
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<tr>
<td>(Alphabetize by last name. Please include the committee members academic title and department affiliation)</td>
</tr>
</tbody>
</table>

**Dissertation Committee Members**

1. (CAB Research Member)

2. (CAB Physician Mentor Member)

3. (CAB or UM graduate faculty member)
SUMMARY OF PROGRESS SINCE LAST MEETING AND/OR PERTINENT INFORMATION

(This summary is to highlight your committee on key points of your progress since the last committee meeting. In addition, you can also add pertinent information to be highlighted and/or addressed to committee members)

Body of progress report is not limited to but should include following:

1. One page summary
2. Specific Aims
3. Background and Significance
4. Results
5. Figures
6. Future Plans
7. Literature Citations

Progress reports should be a clear and concise presentation of the accomplishments in the dissertation research project since the last meeting. This summary should include key points of the student's progress since their last committee meeting. Students are encouraged to seek the advice of their Research and Physician Mentors in completing this document.

Additional guidelines for the written progress report include:

- Summarize findings and progress since the last committee meeting.
- Describe any changes or modifications of the planned experiments and the reasons for the changes.
- Present proposed plans for the next group of experiments.
- The document need not contain ALL of the experimental work since the last progress meeting but should be a selection of the work you consider most important/relevant.
- At the progress meeting itself, it is acceptable to present some experimental results not included in the written progress report.
- The total length of the report is not to exceed 6 pages including figures (12 point font, single spaced). You may append any papers submitted, in press or published.

The document should be distributed as a hard copy and sent via email as a PDF to all Dissertation Committee members, Graduate Program Director, and the Graduate Program Coordinator no less than one week prior to scheduled meeting date of your progress report.
### Evaluation Form Used for QE, Progress, Sufficiency and Defense Meetings

**Program:** Cancer Biology  
**Student’s Name:**  
**Student’s UM ID:**  
**Rating of:** QE Proposal Progress Sufficiency Defense  
**Committee Member’s Name:**

Please write legibly  
A rating of N/A, or “not assessed” may be given if the student has not had the opportunity to demonstrate this competency at this point in training.  
(* Indicate whether the rating given (1-4 or N/A) is appropriate (or “on target”) for this stage in the training)

#### Knowledge of Discipline

<table>
<thead>
<tr>
<th>1</th>
<th>Needs Improvement</th>
<th>2</th>
<th>Meets Expectations</th>
<th>3</th>
<th>Very Good</th>
<th>4</th>
<th>Exceptional</th>
<th>N/A</th>
<th>On Target (Y/N)*</th>
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</thead>
</table>
|    | Critical knowledge of relevant literature  
|    | Quantitative/ Computational knowledge |

**Comments:**

#### Responsible Research Conduct

(Appropriate handling of data integrity/ authorship/ collaborations etc.)  
SEE ATTACHMENT

<table>
<thead>
<tr>
<th>1</th>
<th>Needs Improvement</th>
<th>2</th>
<th>Meets Expectations</th>
<th>3</th>
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<th>4</th>
<th>Exceptional</th>
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<th>On Target (Y/N)*</th>
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**Comments:**

#### Appropriate Methodology

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<th>Exceptional</th>
<th>N/A</th>
<th>On Target (Y/N)*</th>
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</table>
|    | Technical/Experimental ability  
|    | Statistical knowledge |

**Comments:**

#### Application of Knowledge/Methodology

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<th>Meets Expectations</th>
<th>3</th>
<th>Very Good</th>
<th>4</th>
<th>Exceptional</th>
<th>N/A</th>
<th>On Target (Y/N)*</th>
</tr>
</thead>
</table>
|    | Ability to formulate hypothesis  
|    | Ability to design/ analyze experiments |

**Comments:**
### Critical Thinking

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<th>4 Exceptional</th>
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<tr>
<td>Ability to present data clearly</td>
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<td>Ability to recognize significance of experimental findings</td>
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<td>Demonstration of critical thinking</td>
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<tr>
<td>Ability to respond to questions</td>
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**Comments:**

### Effective Written Communications

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<th>On Target (Y/N)*</th>
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<tr>
<td>Quality of written progress report</td>
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<tr>
<td>Overall organization of progress report</td>
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**Comments:**

### Effective Oral Communication

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<th>4 Exceptional</th>
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<th>On Target (Y/N)*</th>
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<tbody>
<tr>
<td>Quality of oral presentation</td>
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<tr>
<td>Quality of visual material</td>
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**Comments:**

### Overall Quality

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Comment on students overall progress and state your confidence that he or she is progressing successfully towards the Ph.D. degree. **Please write legibly**
CAB RCR Guidelines for Committee Meetings

Responsible Conduct of Research has long been an item on the evaluation sheet for progress reports and is at many levels already integrated into individual student mentoring. At the same time it has also become clear that there is not much available in terms of guidelines for RCR evaluation. For the CAB program we will provide an annual seminar and group discussion style training for the students, but the most effective and practice focused training occurs by direct mentoring of individual students. The following list of items provides a template for this evaluation in the setting of a progress meeting. The checklist is designed to serve as an aid that should facilitate the use of the scoring scheme on the progress report sheet. This should also help in providing meaningful comments for the RCR section and track progress on relevant issues where needed. At a given committee meeting, members may evaluate these suggested items or add items at their own discretion. This sheet does not have to be turned in but hopefully serves as a starting point for discussions and helps in identifying areas that need attention. A less than perfect score on the evaluation sheet does not indicate deficiencies in ethical conduct. It is supposed to convey very practical aspects that need to be brought to the student’s attention in the comments section and addressed for future meetings.

Sampling of relevant RCR questions

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>Do visual presentations display a reasonable range of data (e.g. microscopy intensity cut-off, contrast in western blots etc.)?</td>
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<tr>
<td>Are intellectual or data contributions by other lab members or published sources clearly identified as such in the presentation or hand-out?</td>
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<tr>
<td>For completed studies, are error-bars included when appropriate, and is the number of repeats indicated?</td>
<td></td>
</tr>
<tr>
<td>For incomplete studies, is the preliminary nature and current number of repeats being acknowledged and addressed?</td>
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</tr>
<tr>
<td>Are realistically doable experiments that would support or challenge a hypothesis being included? If not, is there a good rationale why they are not being done? If not realistic, can the student envision what would constitute such an experiment?</td>
<td></td>
</tr>
<tr>
<td>Do data exist that may contradict the presented hypothesis? If they exist but are not discussed in detail, is the rational for the way they are being weighted in a group presentation or potential manuscript satisfactory?</td>
<td></td>
</tr>
<tr>
<td>Not all experiments that would benefit from a large “n” can be expected to have one (e.g. certain animal experiments). Does the student show an understanding what constitutes a reasonable “n” for the different type of experiments and what reasonable controls should be in place even if they are normally not shown in publications (e.g. FACS sorting graphs)?</td>
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<tr>
<td>Does the student consider the differences between experimental and acquisition related repeats?</td>
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</tr>
<tr>
<td>Does the student have a good understanding of the limitations and strength of data provided by specific experiments or instrumentation (e.g. linearity related issues of film versus digital acquisition, fluorescence versus chemi-luminescence or other project specific items?)</td>
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</table>
### Questions that will need mentor’s contributions to be answered

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
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<tbody>
<tr>
<td>Does the student keep records of raw data in a way that is easily accessible and cataloged?</td>
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<tr>
<td>Do student and mentor discuss raw data on a regular basis?</td>
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</table>

Please let us know about suggested modifications or additions to this hand-out by marking them on this sheet and returning it with the normal evaluation forms.

Edited 09.19.17
Abstract Title: ____________________________________________________________

CAB Student Name: _______________________________________________________
Research Mentor Name: ____________________________________________________
Date: ______________________________________________________________________

Email your abstract to Sarah Sandiford sls324@med.miami.edu one week prior to your CAB Student Seminar.
CAB701 Student Seminar Evaluation

Date: __________  SPEAKER’S NAME: __________________

☐ Please check box if evaluator is faculty

TITLE of ABSTRACT:

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<th>Good</th>
<th>Fair</th>
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<tr>
<td>Grammar &amp; syntax</td>
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COMMENTS:

TALK:

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<td>Manner of Speech</td>
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<td>Explanation of figures</td>
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<tr>
<td>Ability to answer questions</td>
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<td>Visual aids (slides)</td>
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OVERALL GRADE (1-10 with 10 highest) _______

PLEASE COMMENT ON THE OVERALL PERFORMANCE WITH SPECIFIC ATTENTION TO SCIENTIFIC PROGRESS AND CONTENT
Sheila and David Fuente Graduate Program in Cancer Biology
Approval to Schedule Dissertation Defense

This form must be signed in order to schedule the dissertation defense

I certify that I have met all requirements for dissertation defense including:

_____ I have at least 36 course credits and 24 research credits (need total of 60 to graduate)

_____ I will apply for Graduation in the semester I intend to graduate via CANELINK.

_____ I understand I must be registered for CAB 850 in the semester which I graduate (which may or may not be the semester in which I defend) and will inform the CAB Coordinator of this the semester prior to my defense.

_____ I have at least one peer-reviewed research (not review) article on which I am the major contributor (first or co-first author). Attached is a list of all my publications.

_____ I understand this paper is required to be submitted and reviewed by sufficiency and either accepted or published prior to dissertation defense. (Please acknowledge the Sheila and David Fuente Graduate Program in Cancer Biology on all papers, abstract, posters, etc.)

CAB Graduate Student Name: ______________________________________________

Student Signature: ________________________________ DATE: ________

Research Mentor Signature: ________________________________ DATE: ________

Graduate Program Director: ________________________________ DATE: ________

Ralf Landgraf, Ph.D.

After all signatures are obtained submit a copy of this form to:

CAB Graduate Program Coordinator
Sarah Sandiford s1s32@med.miami.edu (305) 243-2287
Office: Dominion Tower, 1400 NW 10th Ave., Suite 412, Miami, FL 33136

The CAB Coordinator will not schedule the student’s dissertation defense without this signed form.

Updated: 09/15/17 SS
Cancer Biology Graduate Student Travel Reimbursement Request Application:

Return this form WITH a copy of your abstract and letter of acceptance from meeting/conference organizers to:

Office of Education & Training
ATT: Sarah Sandiford
Fox Bldg. # 406
Ph.: (305) 243-2287 Email: sls324@med.miami.edu

Cancer Biology Graduate Students in good academic standing are encouraged to present their work at domestic national meetings. Students must be up to date with dissertation committee meetings in order to be eligible for travel funds. The CAB program has limited funds to help defray the cost for students to attend one annual meeting per fiscal year (June – May) at which they will present their research in a talk or poster as first author. In order to be reimbursed for hotel accommodations students must stay at suggested conference hotels and not at unauthorized or more expensive locations. Funding requests should be submitted to the CAB program coordinator at least 6 weeks prior to the meeting date and include the submitted abstract. Requests will be reviewed on a case-by-case basis.

Name_________________________________________________________________________
Mentor’s Name __________________________ Mentor’s Telephone Number ________________
Name of Meeting/Conference______________________________________________________
Location of meeting ___________________________ Date(s) of meeting __________________
Date of my most recent progress meeting___________________________________________

 _____ I will give an oral presentation. _____ I will present a poster

Justification: Briefly describe reason for attending this particular meeting/conference and how it relates to your cancer research project.

Student Signature ____________________________________ Date _____________________

I support the request of the above named student to obtain a travel reimbursement and I certify that he/she will be presenting his/her own research. I understand the CAB program will cover $800 towards expenses and as mentor I will be financially responsible for the balance.

Mentor Signature ______________________________________ Date ________________

Updated: 07/10/17 SS
This letter must be submitted on University letterhead and signed by your mentor.

Date

To whom it may concern:

This is to notify you that my Cancer Biology graduate student, [STUDENT], will be traveling to [CONFERENCE LOCATION] to attend the [NAME OF CONFERENCE] from [DATES OF CONFERENCE]. [STUDENT’s] attendance at this important meeting directly supports my faculty research on [RESEARCH AREA]. [STUDENT] will make contacts for future collaborations and [HIS/HER] attendance plays a pivotal role in promoting our program and increasing the visibility of UM among students and faculty from institutions across the country.

At the conference [STUDENT] will be presenting a [POSTER/TALK] (as first author) entitled: [NAME OF POSTER/TALK].

Please let me know if you should require any further information.

Faculty Member’s name, Signature & Contact Information
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Back Cover Photo: Multiple Myeloma
This image captures the presence of Phospho-FAK (Green) in Multiple Myeloma and the potential of dependence on Focal Adhesion Kinase signaling for survival. Small molecule inhibitors of FAK may become important in treating cancers with increased expression of Phospho-FAK and survival dependence on FAK signaling.

Photo courtesy of Matthew Brentnall, Ph.D.
Sheila and David Fuente Graduate Program in Cancer Biology
Dr. Lawrence H. Boise Lab