

# Cancer Biology Ph.D. Program

*Student Handbook*  
2007-2008



H. LEE MOFFITT  
CANCER CENTER  
& RESEARCH INSTITUTE  
*At the University of South Florida*

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A NATIONAL CANCER INSTITUTE  
DESIGNATED CANCER CENTER

**USF** UNIVERSITY OF  
SOUTH FLORIDA

## Preface

This handbook has been issued to provide comprehensive information for the students and faculty about the Moffitt Cancer Center's Doctor of Philosophy Program in Cancer Biology. In addition to program specific requirements, it also outlines University degree expectations for degree conferment. Students in joint programs may have additional requirements. Certain exceptions may be made in extenuating circumstances. This handbook is accurate as of its print date.

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H. Lee Moffitt Cancer Center  
12902 Magnolia Drive  
MRC- 4 East  
Tampa, FL 33612

All correspondence will be forwarded to the appropriate personnel through this office.

## **Cancer Biology Education Committee**

To ensure long-term stability and consistency, the Education Committee is comprised of core members representing Molecular Oncology, Immunology, Drug Discovery and Risk Assessment, Detection and Intervention. Core committee membership is for a minimum of 4 years; there is no maximum term limit. The Education Committee also includes all acting course directors for the current academic year.

The Education Committee for 2007-08 is:

Ken Wright  
Doug Cress  
Ed Seto  
Hong-Gang Wang  
Bill Kerr  
Tom Guadagno  
Alvaro Monteiro

Noreen Luetke (Course Director - BSC 6056)  
Jerry Wu (Course Director - BSC 6054)  
Gary Reuther (Course Director - BSC 6065, Fall)  
Mark Alexandrow (Course Director – BSC 6065, Spring)  
Sheng Wei (Course Director – BSC 6055)  
Amer Beg (Course Director – BSC 6057, Fall)  
Tom Guadagno (Course Director – BSC 6057, Spring)  
Alvaro Monteiro (Course Director – BSC 6939)

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## Introduction

The University of South Florida & The Moffitt Cancer Center's Doctor of Philosophy Program in Cancer Biology was founded in the year 2000 to contribute to the prevention and cure of cancer. The challenge to conquer this disease is not only to unravel the molecular and biological basis for tumor development, but also to utilize basic discoveries and to translate their findings into lifesaving cancer therapies. To meet this goal we have designed an interdisciplinary cancer biology curriculum, affiliated with the University of South Florida's Colleges of Medicine, Engineering, and Arts and Sciences that encompasses biochemistry, molecular and cell biology, immunology, signal transduction, drug discovery, chemistry, functional genomics, proteomics, cancer genetics, bioinformatics and cancer therapeutics. This interdisciplinary approach will prepare our students to face the challenge of translating cancer research discoveries into lifesaving clinical protocols. In order to facilitate the best care, it is imperative for researchers to be dedicated to seeing ideas through from the laboratory bench to the patient's bedside.

## Application Process

Applications must be completed on-line and can be accessed at the following URL:

[http://www.grad.usf.edu/newsite/admissions/grad\\_app.asp](http://www.grad.usf.edu/newsite/admissions/grad_app.asp)

International applicants must also complete an on-line application, which can be accessed at the following URL:

<http://web.usf.edu/iac/admissions/>

*The deadline for domestic applications for fall admission is February 1<sup>st</sup>.*

*The deadline for international applications for fall admission is January 2<sup>nd</sup>.*

Completed applications will include:

- The on-line USF Application to Graduate Studies or International Graduate Admissions.

### **Items below are to be mailed directly to the Cancer Biology Ph.D. Program Office:**

- Two original copies of transcripts from all relevant undergraduate institutions
- Personal statement summarizing research experiences and goals
- A CV or resume
- Three recommendation letters from persons who can attest to the applicant's academic abilities
- Official GRE test results directly from ETS (applicants should include photocopies if available)

In addition to these documents, *international applications* must also include:

- TOEFL scores, provided from ETS (applicants may chose to include photocopies)

**These supporting application documents should be returned to the  
Cancer Biology Ph.D. Program Office:**

Cancer Biology Ph.D. Program  
Moffitt Cancer Center  
12902 Magnolia Drive  
MRC 4-E  
Tampa, Florida 33612

## *Admission Requirements*

Eligibility requirements:

- A Bachelor's Degree from a regionally accredited college or university
- An extensive background in biology or chemistry. Preference will be given to those with advanced coursework.
- Minimum 3.0 Grade Point Average (out of 4.0)
- A Graduate Record Examination (GRE) score must be submitted for application to receive full consideration. The GRE Subject test is not required.

For international students:

- TOEFL score of 550 (paper based) or 213 (computer based) or 80 (Internet based)

*Students who seek admission to the Cancer Biology Ph.D. Program are required to meet all of the entrance requirements set forth by University of South Florida and the State University System of Florida.*

Admission is highly competitive.

The majority of successful applicants will exceed the aforementioned criteria.

## *Courses*

Students are required to successfully complete all Cancer Biology Program Core Courses. In addition, students must successfully complete at least **one** elective course that has been approved by the Cancer Biology Education Committee. Students who have not had advanced course work in Biochemistry, Molecular Biology and Statistics will be required to correct these deficiencies by their Dissertation Committees. Courses taken to amend deficiencies do not count toward the elective requirement. Dissertation Committees are also at liberty to require additional coursework in a specified discipline if it will serve to better prepare the student to meet the needs of the research environment.

All students who wish to submit a particular USF course for elective approval by the Cancer Biology Education Committee must do so in writing at least one month prior to the beginning of the semester. All submissions must include the course's title, the official University recognized course number, and a summary of the topics to be covered in class (to be obtained from the Course Director). Requests may be submitted to the Program Coordinator at MRC-4 East.

In special circumstances the Education Committee is authorized to waive course requirements. Requests to waive course requirements should be made in writing, providing a detailed account of the specifics of the request, along with copies of any pertinent documentation pertaining to the request.

## **Required Core Cancer Biology Courses**

BSC 6056	<b>Cancer Research Techniques</b>
BSC 6054	<b>Cancer Biology I</b>
BSC 6055	<b>Cancer Biology II</b>
BSC 6058	<b>Laboratory Rotations</b>
BSC 7911	<b>Directed Research</b>
BSC 6066	<b>Advances in Cancer Biology</b>
BSC 6057	<b>Current Topics in Oncology</b>
BSC 6939	<b>Selected Topics In Cancer Biology Cancer Genetics</b>

### **Cancer Research Techniques**

This course will expose graduate students to modern molecular and cellular biology principles and techniques utilized in basic and translational cancer research as performed in eleven Moffitt sponsored core facilities. Each core rotation of 1-2 weeks will include instruction by core staff via lectures and laboratory demonstration and participation. Practical applications and considerations of core services will also be described.

**Topics Typically include:**

- Molecular Biology
- Biostatistics
- Tissue Procurement
- Translational Research
- Molecular Imaging
- Flow Cytometry
- Cell Therapies
- Microarray
- Microarray Data Analysis
- Mouse Models
- Histopathology
- Analytic Microscopy
- Laser Microdissection
- Animal Subjects: IACUC
- Human Subjects: IRB

### **Cancer Biology I – *The Basics of Molecular Oncology***

*Prerequisites: Undergraduate Biology and Chemistry*

This course will provide in-depth exposure to many current topics in molecular and cell biology as they relate to cancer. A balance will be sought between cell biology, molecular biology, and biochemistry. The primary objective of this course is to obtain a current understanding of normal and abnormal cellular processes. In order to achieve this, this course is taught by a variety of lecturers who are scheduled to speak on their personal area of expertise. Topics to be covered include signaling transduction, transcriptional regulation, cell cycle control, apoptosis, drug discovery, oncogenes and tumor suppressors.

Individual instructors will provide reading assignments.

**Topics Typically include:**

- Molecular Basis of Cancer
- Cytoplasmic Signaling
- Transcriptional Regulation
- Cell Cycle Control
- Apoptosis
- Tumor Suppressors
- Drug Discovery

**Text:** *The Biology of Cancer*, 1<sup>st</sup> Edition, Weinberg  
*Molecular Cell Biology*, 5<sup>th</sup> Edition, Lodish, Berk, Matsudaira, Kaiser, Krieger, Scott, Zipursky & Darnell  
*Molecular Basis of Cancer*, 2<sup>nd</sup> Edition, Mendelsohn, Howley, Israel & Liotta

## **Cancer Biology II – Immunology and Applied Molecular Oncology**

*Prerequisite: Cancer Biology I*

This course is a continuation of Basic Cancer Biology. It is divided into two broad sections: Immunology and Applied Cancer Biology. The Immunology section will cover the basics of normal immune development and function, cancer in the immune system as well as basic and applied aspects of transplant immunology. The Applied Cancer Biology section will cover several topics on the treatment of cancer.

### **Topics Typically include:**

- Innate and Adaptive Immunity
- Genetic Basis for Antibody Diversity
- Diversification of Immune Receptors
- T Cell Activation
- T & B Cell Signal Mechanisms
- B Cell Activation
- Myeloid Cell Lineages and Immunity
- Cellular Mechanisms and Molecular Mechanisms of Antigen Presentation
- Natural Killer Cells
- Complement System
- Tolerance
- Tumor Immunity
- Transplantation Immunology
- Hematopoietic Stem Cell Biology
- Biology of Hematolymphoid Malignancies
- Principles of Chemotherapy
- Principles of Radiation Therapy
- Cytokine Gene-Based Therapies
- Targeting Signaling Pathways with Gene Therapy
- Translational Models of Cancer
- Early Detection and Prevention of Cancer
- Biology of Hematolymphoid Malignancies II
- Bone Marrow Transplantation

**Text:** *Fundamental Immunology* 5<sup>th</sup> Edition, Paul  
*Cellular and Molecular Immunology*, 6th Edition, Abbas

## **Laboratory Rotations**

First Year Cancer Biology Ph.D. students will be required to complete the **Laboratory Rotations** Course. This course is designed to help the students choose a compatible Major Professor and allow students to develop necessary technical skills. It is graded on a satisfactory (pass) or unsatisfactory (fail) basis.

The *Laboratory Rotations Course Director* will contact all program faculty members and arrange for them to give brief presentations of their research to incoming students on a day known as, **Meet the Mentors**. On this day, potential “Major Professors” will be allotted 10 minutes each to present their research to the incoming Cancer Biology students.

After these presentations, students will consult with individual faculty members whose interests are compatible to their own and arrange for rotations. A **Rotation Form** that has been signed by the sponsoring faculty mentor must be submitted to the course director within two weeks.

Students are encouraged to complete 3 rotations. If the student chooses to complete 2 rotations, each one will be for an entire semester (one in the fall and one in the spring). If the student chooses to complete 3 rotations, each one will be for 10 weeks so the student has adequate time in each laboratory to make an informed decision about who his or her Major Professor will be. If

after completing the spring semester, the student still has not decided whom to choose as his or her **Major Professor**, he or she may enroll in the Laboratory Rotations Course for the summer semester.

Students enrolled in this course will be evaluated by the professor whose laboratory in which they are completing their rotations and by the Laboratory Rotations Course Director.

## **Directed Research**

This course consists of practical laboratory work, guided by the student's major professor. It is taken prior to passing the qualifying exam. Students enrolled in *Directed Research* receive either a *satisfactory* or an *unsatisfactory* grade.

## **Advances in Cancer Biology**

An important component of graduate training is gaining experience in the critical evaluation of research reports and developing and executing professional research presentations. This course will provide Cancer Biology graduate students with the opportunity to read and orally present current cancer research literature. The student will learn to critically evaluate research for coherence with respect to the authors' rationale and quality of the methodology employed. Students are enrolled in this course from their second year in the program until the semester in which they defend their dissertation.

## **Current Topics in Oncology**

Progress in cancer research is proceeding at a rapid rate, and thus, textbooks and didactic lectures are inherently behind the times. This course will bring renowned speakers from outside the USF community in order to broaden the students' perspectives on cancer research beyond the walls of the Moffitt Research Center. In preparation for each seminar, students will be assigned two papers to read and critically examine. These articles will serve to introduce the students to the speaker's area of expertise and generate questions for discussion. Following the seminar, participants will meet with the speaker and the course director to discuss cancer research innovations relevant to the speaker's specialization. Enrollment in this course is limited to second- and third-year Cancer Biology students only.

## **Selected Topics In Cancer Biology**

This course provides an in-depth study of a single aspect of cancer biology.

**Cancer Genetics:** This course explores the field of cancer genetics through a combination of traditional lectures and analyses of case studies. The lectures cover various concepts and methodologies. Concepts to be covered include penetrance, oncogenes, two-hit hypothesis, tumor suppressors, loss of heterozygosity, epidemiological studies, LOD scores, and risk assessment. Methodologies to be covered include: RFLP -> microsatellite markers -> SNPs, positional cloning, Representational Differential Analysis (RDA), Comparative Genomic Hybridization (CGH), spectral karyotyping, haplotype analysis, and somatic cell genetics to identify complementation groups. Case studies will revisit the concepts and methods above in light of actual data. **Course prerequisite:** Cancer Bio I and II; approval by Program Director and Course Director.

**Text:** *Introduction to Genetic Analysis*, 8<sup>th</sup> Edition, Griffiths, Wessler, Lewontin, Gelbart, Suzuki, Miller  
*The Biology of Cancer*, 1<sup>st</sup> Edition, Weinberg

## **Approved Selective Courses\***

Each student must take at least one "selective" course offered throughout the University. These

selectives vary on an annual basis. Students must have their choice approved by their dissertation committees. The purpose of these courses is to expand the breadth of the student's subject matter knowledge in his or her chosen field. Courses will be approved or rejected by the committee based on these criteria.

## *Key Program Requirements*

### **Selection of Major Professor**

Selection of a student's Major Professor is the most important aspect of graduate training. Upon selection, the major professor becomes the key faculty member responsible for the student's training. This individual not only serves as a scientific mentor to the student, but he or she also functions as the student's source of financial support beginning in the second year of the program. Therefore one must consider the availability of funding when choosing a Major Professor.

Typically, students should select a Major Professor before or around June 1<sup>st</sup> of their first year in the program. If a student needs more information prior to making a selection, he or she is encouraged to enroll in a third semester of Laboratory Rotations, thereby delaying the selection deadline until September 1<sup>st</sup>.

### **Selection of Dissertation Committee**

Immediately following the selection of the Major Professor, the Dissertation Committee must be selected. Under the guidance of the Major Professor, the students will choose a minimum of three additional Faculty members to serve on the Dissertation Committee along with the Major Professor. At least one member of this committee must also be a member of the Cancer Biology Education Committee at the time of the committee's formation. A complete list of Education Committee Members is available at the beginning of this handbook and in the Program Office. All committee members must be members of the Graduate School. Once the committee members have been selected, a USF Graduate Student Supervisory Committee form must be completed, signed and returned to the Cancer Biology Program Office, for forwarding to the Dean of Graduate Studies.

The responsibilities of the Dissertation Committee are to:

- Review the student's transcript and oblige the student to complete additional coursework if relevant to successful completion of the program.
- Prepare, administer and grade the written and oral qualifying examinations.
- Advise and monitor the student's academic progress toward the Ph.D. degree.
- Advise the student on dissertation research.
- Evaluate the student's final dissertation and oral defense.

Once formed, the dissertation committee is the primary authority that guides the student. If serious problems arise with the Dissertation Committee, the student must document his or her concerns in writing and submit them to the Program Administrator. The request will then be presented at the next Cancer Biology Education Committee meeting. The committee will discuss

the situation and decide whether or not the situation warrants intervention. The Committee reserves the right to interview both the student and the Faculty members in question prior to making a final decision on the matter. In the event that Dissertation Committees need to be changed for any reason, the student must submit a new Supervisory Committee Form to the Cancer Biology Office.

## Qualifying Examinations

The student is eligible to take the qualifying exams when and only when the following criteria are met:

- A major professor has been selected
- The dissertation committee has been established
- The required Cancer Biology core courses are complete
- The required “selective” courses are complete

Qualifying exams are usually taken in the Spring semester of the second year. The qualifying exam includes three parts: **a written exam, a fifteen-page research proposal, and an oral defense of the research proposal.**

The representative from the Cancer Biology Education Committee who is on the student’s Dissertation Committee will serve as the chairperson for the Qualifying Exam and take responsibility for its assembly. Each member of the Dissertation committee will submit at least two essay questions to the Chairperson. The committee is required to take into account course work that the student has taken and the student’s area of research interest. The written examination will consist of six essay-style or problem solving questions, of which 4 must be completed in the five hours allotted for this part of the exam and without consulting notes or any other printed materials.

Each member of the dissertation committee will grade the exam on a scale of 100 points. The committee is allotted two weeks to grade the exam. If the student achieves a score of 70% or above, the exam is passed. In this case, the student will then have sixty days to prepare the written research proposal. In the event that the student scores below 70% on the exam, the student is required to reschedule in order to take another version of the written exam. The student is required to meet with the members of the dissertation committee to hear recommendations regarding preparing for the second exam. If the exam is failed a second time the student will be dismissed from the program at the end of the current semester.

Following successful completion of the written examination, students will have sixty days to submit a research proposal detailing their planned dissertation research. The proposal should follow the guidelines for a NIH Research Grant Application (form PHS 398). Only the Research Plan (sections a,b,c,d) and the Literature Cited (h) sections are required for submission. The page limit for Research Plan sections a-d is set at fifteen pages with 12-point font. The remaining sections do not have a set limit. Information regarding the format can be found at:

<http://grants1.nih.gov/grants/funding/phs398/phs398.html>.

The major professor should approve of the proposal before it is submitted to the committee. The major professor may make suggestions to the student for improvement prior to the submission of

the proposal, however, the major professor is not allowed to provide previously written grant proposals on related topics to the student. The proposal must be the original work of the student. The proposal should be submitted to each member of the dissertation committee at least two weeks prior to a scheduled oral presentation of the proposal.

Up to one hour is allotted for the oral presentation of the proposal. This segment of the qualifying exams is open to the public. Immediately following the presentation, the student will meet with the Dissertation Committee for an oral defense of the proposal, which may include any general questions the committee would like to ask. The written and oral sections will be graded independently according to the criteria listed on the Qualifying Exam Evaluation Form. Both sections must be passed. The student must achieve at least 70% on a 100-point scale to receive a passing grade. In addition to this, if more than one member of the committee records a failing score for the student, the student automatically receives a failing grade. The committee may elect to require the student to amend the proposal and/or repeat the oral defense to correct any deficiencies. Amended proposals must be submitted within 2 weeks of the exam and/or a second oral defense within three weeks. It will be the responsibility of the committee chairperson to calculate the grade and determine whether the student passes or fails. Students failing this portion of the qualifying exam will be dismissed from the program at the end of the current semester.

Once the qualifying examination has been passed, students will submit an **Admission to Candidacy form** to the Dean of the Graduate School. Following *admission to candidacy* students must register for a minimum of two hours of Dissertation Research (BSC 7980 Dissertation Research) each semester. From this point forward, the major professor will serve as the Chairperson of the Dissertation Committee.

## **Annual Progress Reports**

All Cancer Biology Students must submit an Annual Progress Report to the Office of Cancer Biology (MRC 4072) by September 15<sup>th</sup> beginning the second year that they are enrolled in the program. The report will be presented to the Education Committee.

The following information is required as part of **the students'** annual progress portfolio. Items should be submitted in the following order:

1. Research Progress (1/2 page)
2. Publications
3. Abstracts of Talks Given
4. Honors and Awards
5. Printout of all classes taken with grades assigned
6. List of courses taken during the year

**Second year students** should also include lab rotations completed and Committee members selected. A template is available on the Cancer Biology website in the Current Student sub section in "Forms".

**The Major Professor** is required to prepare an evaluation of the student's performance and progress. Are they on track for graduation? What are their strengths? What do they need to

improve on in order to succeed? After completing the report the Major Professor and student should discuss it so that the student understands their current status. This needs to be an *honest* evaluation. If the student has deficiencies it is important that it be addressed promptly so that all parties understand the circumstances and have an opportunity to improve. This report must be co-signed by the student and submitted to the Cancer Biology Program Coordinator (MRC 4 East).

Students and Major Professors should retain a copy of the report.

## **Annual Committee Meetings**

Candidates are required to organize annual meetings of their Dissertation Committees. The purpose of these meetings is for the committee to evaluate the student's progress toward the degree and to provide input and direction. Evaluation forms, available on the Program's website under the "Students-Information and forms for current students" section as "Dissertation Committee Meeting Report Form", should be completed at each meeting, signed by the members of the committee and the student, and then submitted to the Cancer Biology Education office.

## **Stipends**

*Full tuition and fee waivers are provided. The Cancer Biology Program covers student health insurance premiums. In addition, each first year student receives a stipend of \$22,600 per year (2007-2008). Cost of living increases occur annually from the second year through the fifth year of study. As noted in the Student-Major Professor Selection and Commitment form, stipend support beyond five years from the time of admission (not counting leave of absences) is not guaranteed.*

Incoming students are supported from Program funds for their first year only. Beginning the second year, the major professor will henceforth be responsible for providing stipend for the student. Tuition and health insurance will continue to be paid by Cancer Biology Programmatic Funding. **All students are encouraged to apply for funding from outside sources.** It is highly recommended for students to submit their Qualifying Exam Research Proposals to relevant granting agencies for consideration. The chairman of the Cancer Biology Education committee will maintain a list of relevant granting agencies and will assist students in obtaining application materials.

**Outside employment for students who are receiving stipends is strictly prohibited.**

## **Fellowships**

### **Purpose:**

The Cancer Biology Program encourages all students to apply for pre-doctoral fellowships. These awards are very prestigious both for the individual student and for the Program. Students should consider applying as soon as possible after selecting a mentor since many pre-doctoral awards are not available after the student completes their second year.

In an effort to maintain consistency across the program and to avoid confusion between the expectations of the mentor and student, the following policy has been established.

**Policy Statement:**

A student who acquires funding for his/her stipend will receive the greater of:

A 10% bonus over their current stipend for the duration of the award. The bonus is not to exceed the amount of the award. The Major Professor is responsible for providing the bonus to the student.

OR

The entire amount of the Fellowship, if that amount is greater than the current stipend and bonus combined.

Should the fellowship stipend be less than the corresponding stipend level within the Cancer Biology Program for the student, the Major Professor will be required to fund the difference so that the student will remain on par with his/her peers. This funding would be reviewed and adjusted as necessary on an annual basis.

**Parental Leave**

**Purpose:**

To provide guidelines for addressing maternity leave requested by Graduate Students in the Cancer Biology Ph.D. Program.

**Definitions:**

**Student** – For the purpose of this policy, “student” will refer to a USF student currently enrolled in the Cancer Biology Ph.D. Program.

**Policy Statements:**

Eligibility:

- A. Students must have completed at least 2 consecutive semesters as a Cancer Biology Graduate Research Assistant/Associate or as a USF Presidential Fellow.
- B. Students must be in good academic standing.

The student must notify the Cancer Biology Program Director and their major professor in writing as soon as possible but no later than 4 months prior to expected delivery of child.

If the student is the birth mother, then she will be eligible for 6 weeks paid leave. If the student is the birth father, he will be eligible for 3 weeks paid leave. Adoptive parents will be eligible for 3 weeks paid leave.

During leave, the student will remain registered as a full time student. The student (in consultation with the Cancer Biology Program Office) must assure that she/he will not be

registered for courses in which their absence will result in a failing or incomplete grade. Students may register for Directed Research or Dissertation Research.

If necessary, Ph.D. qualifying examinations will be postponed until the semester following the student's return from parental leave.

Once the birth mother returns to lab related work, she may request that responsibilities be scaled back to a minimum of 20 hours per week while receiving full pay for up to 4 additional weeks. The mentor and student will determine a mutually satisfactory part-time schedule prior to the student's return to the lab.

The Cancer Biology Ph.D. Program will provide the stipend during the initial parental leave and one half of the stipend during the period the student elects to scale back to 20 hours per week. The Major Professor will be responsible for the other half of the stipend during the scale back period of 20 hours per week.

This funding mechanism is available only twice for each student.

## **Travel Awards**

*This program will be renewed annually, contingent on the availability of departmental funds. To be eligible you must be a student in the Cancer Biology Ph.D. program.*

For a meeting to qualify for this award, it must be either:

- 1) A scientific conference in which you are presenting an abstract as first author  
OR
- 2) A respected scientific course (i.e. Cold Spring Harbor). *Training courses run by companies to instruct you in the use of their equipment do not qualify.*

The Cancer Biology Ph.D. program will grant one travel award per student per **calendar** year. There will be no restriction on the destination but the award will be capped at \$1,000. The student's faculty mentor will be required to meet any expense beyond the \$1,000 limit.

Students will make every effort to minimize costs and all travel arrangements **must** be made through the Program Coordinator. The standard USF travel *per diem* will apply.

Any student who accepts the award is required to submit a written meeting report within three weeks of his or her return. This report should summarize what the student has learned at the meeting and how this will benefit his or her research and/or career. The student must also submit a copy of the meeting schedule and all documentation requested for reimbursement purposes at this time.

How to Apply:

Complete the Travel Award Request form available on the Cancer Biology website: <http://cancerbio.hsc.usf.edu>, go to the "Students" section, then to "Information and forms for current students click here". Submit with necessary travel dates/times to Cathy Gaffney, MRC 4-E.

If requesting payment of registration fees, please have all necessary documents to Cathy at least 4 weeks prior to any published deadlines.

## *Requirements for Degree Conferment*

### **Publication Requirement**

Students must have *at least* one paper (first author) accepted for publication in a peer-reviewed journal. Generally, it is expected that students surpass this requirement by publishing numerous papers. If questions are raised regarding whether or not a paper qualifies to meet this publication requirement, the final decision will be determined by a majority vote of the dissertation committee. *This paper must reflect the student's own, original work.*

### **Research-In-Progress Seminars**

Each Ph.D. candidate is required to present a minimum of two formal seminars to the Moffitt Cancer Center Faculty. This may be incorporated into the formal Research-in-Progress Seminar program (no more than one in a twelve-month period) or arranged by the Program Administrator, specifically to fulfill this requirement. It is the student's responsibility to contact the Research-in-Progress seminar coordinator in their third and fourth years to insure that they are scheduled. The final defense seminar does **not** count toward this requirement.

### **Credit Requirements:**

Required Courses	38-42 hrs
Elective Courses	2-12 hrs
Directed Research	12-20 hrs
Dissertation Research	24-50 hrs

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Total Credits **96 hrs**

### Additional University Requirements

- 1) *Three academic years of work beyond a bachelor's degree*
- 2) *At least one academic year of residence on a USF campus*
- 3) *A minimum of 9 credit hours (Fall and Spring) or 6 credit hours Summer is required to maintain full-time status (it may be necessary to register for Directed Research credits prior to being admitted to candidacy to maintain a full course load).*

## Dissertation and Oral Examination

Once a candidate has met all program requirements and the Major Professor has reviewed and approved the student's dissertation<sup>1</sup> draft, the candidate should submit his or her dissertation draft to each member of the previously appointed Dissertation Committee. Once the committee members have had at least two weeks to review the dissertation draft, the committee should meet to decide whether the dissertation draft is approved or disapproved. The Dissertation Committee may approve the draft as written, or approve with the stipulation that the student complete minor modifications to the existing draft. If *extensive* modifications are required, the student must modify the draft and begin the review process again by resubmitting the draft to the Major Professor and then to the members of the Dissertation Committee.

When the Dissertation Committee has approved the dissertation draft, they will complete a form requesting the announcement and scheduling of the Dissertation Oral Defense examination. This form must be submitted to the **Dean of the Graduate School** for approval. The Dean must receive the form at least three weeks prior to the dissertation defense. In addition, the oral defense of the dissertation must be held at least three weeks prior to the end of the semester for the student's degree to be confirmed at the end of that semester. Therefore, the Graduate School must receive the request for defense **at least six weeks** before the end of the semester in which the degree is to be granted.

The Chairperson of the Dissertation Defense Committee will be from outside of the USF community and should be an expert in the student's field of interest. The student and Major Professor will confer and select a dissertation defense chair. This Chairperson must be approved by the Cancer Biology Program Director and by the Dean of the Graduate School.

The **Dean of the Graduate School** must approve all Dissertations prior to conferment of the Ph.D. degree. Detailed information may be found at the following URL:

[http://www.grad.usf.edu/thesis\\_dissertation.asp](http://www.grad.usf.edu/thesis_dissertation.asp)

The Graduate School will not accept a dissertation after the first day of a semester unless the candidate is enrolled in the appropriate dissertation course for at least 2 credit hours. All dissertations are to be submitted to the University electronically.

## Dissertation Policies

### Format of the Dissertation Thesis

#### Purpose:

To provide uniformity to the dissertation theses produced by the graduates of the Cancer Biology Ph.D. Program.

#### Policy Statements:

- A. The outside chair for the dissertation defense will be included in the "Acknowledgement" section of the thesis. The outside chair's full name followed

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<sup>1</sup> Instructions concerning the format of the dissertation can be obtained by consulting the USF Handbook for Graduate Theses and Dissertations.

by his degree designation (Ph.D., M.D.) and the institute where he is currently on faculty should all be noted as well as any other relevant information.

- B. Full citations containing all authors and full titles will be used in the “Reference” section of the thesis, **not** the abbreviated form containing the first author’s name followed by “et al”.
- C. The binding and lettering of the print copy of the thesis is required to match as closely as possible those theses of earlier graduates (located in the Cancer Biology Program office). An existing thesis can be picked up and taken to the USF Bookstore as an example.
- D. The Program will reimburse the student for the cost of printing and binding three (four if there is a Co-Major Professor) copies of the dissertation thesis. One copy will be kept in the Cancer Biology Program Office, one copy will be presented to the Major Professor and one copy is for the student.

## **Time Limits Policy**

**Policy:** Time Limitation on Funding Support

**Purpose:** To clarify existing policy and establish criteria for continued funding beyond 5 years of study.

### **Policy Statements:**

To qualify for their dissertation defense and ultimately graduation, Cancer Biology PhD students are required to show proficiency, distinctive achievement, demonstrate the ability to do original independent cancer research and document this achievement with at least one first author peer reviewed scientific publication.

These qualifications and a successful dissertation defense should be reached within 4-6 years of admittance to the Program.

1. Stipend support and tuition/fee payments beyond 5 years from time of admission (not counting leave of absences) will be subject to annual review.
2. If a student expects to require continued funding beyond 5 years the student must submit an application of continued support for approval by the Cancer Biology Education Committee. The application procedure is:
  - a. Submit a written application to the Education Committee no later than July 15<sup>th</sup> preceding the beginning of the Fall semester of the 6<sup>th</sup> year.
  - b. The application must include clear statements of progress toward graduation, requirements completed and a clear plan with a time line for achieving the graduation requirements.
  - c. The application must be signed by the student and include signatures of the mentor and all committee members indicating receipt of a copy of the application. (Note: Mentor and committee member signatures do not indicate support for the application, only acknowledgement that they are aware the application is being made.)

- d. The mentor must submit a separate letter to the Education Committee indicating his/her support or lack of support for the application. If supporting the application, the letter should also state a willingness to continue to fund the student's stipend for an additional year. If co-mentors are involved, both should submit letters.
- e. The Education Committee may also request letters from the other dissertation committee members.
- f. If the application is approved it will be valid for one academic year. Additional years of extended funding will require a new application for each year.
- g. If the application is denied the student may appeal the finding or request one year of continued enrollment in the program without financial support (in this case the student will become responsible for cost of tuition and will not receive a stipend).

3. *USF Graduate School Policy* - Students have 5 academic years after admission to candidacy to successfully defend their dissertation. If the student needs additional time, the student must submit a request for an extension to the Graduate School. Procedures are available on the USF Graduate Studies web site.

# Appendices