

2016-2017

Human Genetics and Genomics

Graduate Student Handbook



UNIVERSITY OF MIAMI
**MILLER SCHOOL
of MEDICINE**

TABLE OF CONTENTS

THE HUMAN GENETIC AND GENOMIC GRADUATE PROGRAM

Introduction	1
Programs in the Biomedical Sciences (PIBS) & Human Genetics and Genomics (HGG) Core Curriculum	2
PIBS Curriculum and PIBS Course Descriptions	3-5
HGG Curriculum and Course Descriptions	6-12

PROGRAM FACULTY AND ADMINISTRATION

Steering Committee	13
Graduate Program Faculty	13-14

STUDENT ADVISING, DOCTORAL CANDIDACY & GRADUATION

Developing a Research Project and Training Plan.....	15
The Examination Committee	16
Student Progress	17
Admission to Candidacy: Written Dissertation Proposal and Oral Defense (Qualifying Examination)	17-20
Annual Progress Meetings and Reports / Requesting Sufficiency.....	20-21
Final Dissertation Defense.....	21-22
Electronic Thesis and Dissertation	22
Graduation	22-23
Master of Science Degree.....	23
The Appeals Process.....	23

COMPENSATION AND BENEFITS

Stipend / Tuition / Health Insurance / Fellowships	24
Leave of Absence / Vacation Policy	25

GENERAL INFORMATION

Plagiarism / Workday-CaneLink / International Student & Scholar Services Student Counseling / Security.....	26-27
--	-------

IMPORTANT CONTACT INFORMATION / ACADEMIC CALENDARS.....

EXAMINATION STANDARD RATING MATRIX

STANDARD COMMITTEE SUMMARY FORMATS

Summary of Dissertation Proposal and Oral Defense (Qualifying Examination)	30
Summary of Dissertation Committee Meeting (Progress Meeting)	31

THE HUMAN GENETICS AND GENOMICS GRADUATE PROGRAM

INTRODUCTION

The Interdepartmental Ph.D. Program in Human Genetics and Genomics is a multidisciplinary program aimed at training scientists broadly in areas of human genetics and genomics relevant to human health and disease. The emerging practice of “precision medicine,” whereby clinical treatment decisions are based in part on an individual’s genomic profile, depends on “genomic literacy” among practitioners, researchers, and patients. Human Genetics and Genomics is a multidisciplinary field that requires training in three core competencies: clinical, molecular, and statistical genetics. Individuals earning Ph.D. degrees in Human Genetics and Genomics will have various career options, including clinical laboratory (after fellowship training and board certification), research laboratory, or computational research in academia, healthcare, and the biotechnology industry.

ADMINISTRATION

This handbook contains the guidelines for current students as well as those entering the Interdepartmental Ph.D. Program in Human Genetics and Genomics. Both Program-specific and Graduate School requirements and expectations are included. However, the information in this handbook may be subject to change. Therefore, if any questions arise regarding requirements, please contact the HGG Graduate Program Coordinator, so students can continue to be well-informed of all current guidelines and procedures.

CONTACT INFORMATION

Graduate Program Director:
Dr. William Scott
w.scott@med.miami.edu

Graduate Program Coordinator:
Dori McLean
dmclean@med.miami.edu

<http://biomed.miami.edu/graduate-programs/human-genetics-and-genomics>

PROGRAMS IN THE BIOMEDICAL SCIENCES (PIBS) and HUMAN GENETICS and GENOMICS (HGG) CORE CURRICULUM

The PhD in Human Genetics and Genomics (HGG) curriculum allows candidates to pursue a track in *molecular* or *computational* genetics by their second year of training; however, all students complete a core curriculum in the first three years of graduate study. Students will also participate in seminars and journal clubs in the fall and spring semesters, through all years of study.

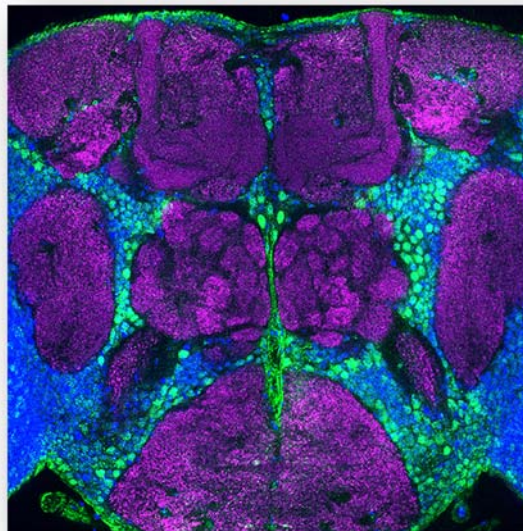
During the first year students follow the Program in Biomedical Sciences (PIBS) core curriculum. **The PIBS students interested in Human Genetics and Genomics are strongly encouraged to take two introductory HGG short courses in the spring semester: HGG 630 – Variation and**

Disease and HGG 640 – Family Studies and Genetic Analysis which are requirements for completing the HGG degree. Courses in computational/quantitative skills, including biostatistics and bioinformatics will also form part of the first year PIBS curriculum. Each PIBS student completes at least 3 lab rotations of nine weeks each and chooses a dissertation laboratory (and graduate program) during the latter half of the spring semester. If necessary a fourth rotation may be possible, and in this case a laboratory choice may be deferred until June. All PIBS students will make short presentations to a group of faculty after each lab rotation. For these presentations the students will be divided into four groups with related research interests.

After choosing a mentor and laboratory at the end of the first year, a student becomes a member of the HGG program. Students select and follow a track in molecular genetics or computational genetics in the first semester of year 2. At this point course requirements differ slightly between these two paths: Students in the molecular genetics track take Advanced Topics in Molecular Genetics (HGG 650) in the second semester, while the Computational Genetics track students take a second course in biostatistics (EPH 602) and a course in genetic epidemiology (HGG 621).

In addition to the required core courses (see HGG Curriculum), all students participate in a one-credit clinical rotation, and serve one semester as a teaching assistant for a core course, in their fourth or fifth year.

It is expected that on average students will complete the program in five years.



Drosophila NMNAT (Chong Li - Zhai Lab)

PIBS CURRICULUM [Year 1]

FALL		12-13 Credits
PIB 700	Journal Club	1 credit
PIB 701	Introduction to Biomedical Sciences	5 credits
PIB 702	Scientific Reasoning	3 credits
PIB 731	Laboratory Research (<i>1 credit per rotation</i>)	1-2 credits
PIB 780	Research Ethics	1 credit
PIB 782	Professional Development: Skills for Success I	1 credit
SPRING		6-7 Credits
PIB 700	Journal Club	1 credit
PIB 705	Biostatistics for Biosciences	3 credits
PIB 731	Laboratory Research (<i>1 credit per rotation</i>)	1-2 credits
PIB 783	Professional Development: Skills for Success II	1 credit

*PIBS students interested in **Human Genetics and Genomics** are strongly encouraged to take two introductory HGG short courses in the spring semester (listed below) that are requirements for completing the HGG degree.*

SPRING (HGG)		4 Credits
HGG 630	Variation & Disease	2 credits
HGG 640	Family Studies & Genetic Analysis	2 credits

SUMMER I / SUMMER II		1 Credit
PIBS 830	Doctoral Dissertation	1 credit

Students may begin registering for dissertation research credit upon choosing an HGG faculty member as a research mentor and beginning laboratory work related to the potential dissertation research project. Students continuing laboratory rotations into the summer will not register for dissertation research credit. No more than **6 credits** of HGG 830 may be taken before admission to candidacy (by successfully defending the dissertation proposal), **expected to take place by the summer of year 2 (*molecular track*) or end of the fall semester of year 3 (*computational track*)**. In instances where we may have students needing to extend this they will not be allowed to take more dissertation research credits until they successfully defend their dissertation proposal.

PIBS COURSE DESCRIPTIONS

FALL (YEAR 1)

PIBS 700 JOURNAL CLUB/SEMINAR

1 CREDIT

All PIBS students are required to attend one journal club or seminar each week for the entire academic year.

PIBS 701 INTRODUCTION TO BIOMEDICAL SCIENCES

5 CREDITS

This course surveys fundamentals of molecular and cellular biology that underlie all modern biomedical research. Lectures are organized into modules that cover Proteins and DNA, Gene Expression, Signaling and Membranes, Cells, and Development. A final module covers immunology, organ systems, and genetics. Experimental techniques are emphasized throughout, with the first week of the course devoted to a boot camp on common biomedical methods.

PIBS 702 SCIENTIFIC REASONING

3 CREDITS

This course teaches scientific reasoning by critical reading of primary research papers in a small-group setting. Multiple small groups are offered every week and students can choose from different topics related to lectures in the companion PIBS 701 course. Research papers are discussed in two 1-hour sessions each week.

PIBS 731 LABORATORY RESEARCH

1 CREDIT (per rotation)

Laboratory rotations familiarize students with a variety of modern techniques in biomedicine and potential mentors for their dissertation projects.

PIBS 780 RESEARCH ETHICS

1 CREDIT

The NIH Guide and Contracts stipulates that institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort.

PIBS 782 PROFESSIONAL DEVELOPMENT: SKILLS FOR SUCCESS I

1 CREDIT

This workshop will teach students the basics on how to: write a fellowship and scientific paper as well as the proper and ethical handling of research data.

SPRING (YEAR 1)

PIBS 700 JOURNAL CLUB/SEMINAR

1 CREDIT

All PIBS students are required to attend one journal club or seminar each week for the entire academic year.

PIBS 731 LABORATORY RESEARCH

1 CREDIT (per rotation)

Laboratory rotations familiarize students with a variety of modern techniques in biomedicine and potential mentors for their dissertation projects.

PIBS 783 PROFESSIONAL DEVELOPMENT: SKILLS FOR SUCCESS II 1 CREDIT

This workshop will teach students the basics on how to: write a fellowship and scientific paper as well as the proper and ethical handling of research data.

PIB 705 BIostatistics for Biosciences 3 CREDITS

This is an introductory course that covers the basics of applied statistics. The course emphasizes a practical understanding of statistical concepts: the goal is to prepare you to be able to properly analyze and interpret data from your own research, not to turn you into a statistician. As such, the structure of the course is designed to provide hands-on experience with data and statistical software, and to teach you how to proceed when you encounter novel problems in the future (e.g., data that you're not quite sure how to analyze). An overall goal of the course is to prepare you to be able to intelligently assess the statistics commonly encountered in journal articles in your field, to and provide you with the foundational skills required for more advanced statistical methods when you later encounter the need.

HGG 630 VARIATION & DISEASE (Spring A) 2 CREDITS

This course provides an overview of the science of genetics, including historical and modern approaches, with emphasis on the underlying mechanisms of human genomic variation and their relation to human disease. After taking this course, the student will be able to list the different types of human genomic variation, explain the mechanism by which each occurs, and discuss the consequences of the variations. Where appropriate, specific examples of human disorders will be related to the variations. Topics include: chromosomal, biochemical, and DNA sequence variation, mitochondrial genome variation and epigenetic effects. The course structure consists of a combination of lectures and discussion of primary literature. Course includes two 1.5 hour lectures and a 1.5 hour computer lab.

HGG 640 FAMILY STUDIES & GENETIC ANALYSIS (Spring B) 2 CREDITS

The focus of this course is the use of families in the study of genetic disorders and traits. Both qualitative and quantitative phenotypes will be studied. Major topics covered include: heritability, heterogeneity, segregation analysis and linkage analysis. By the end of the course, the student will be able to design and carry-out a family based mapping study. The course consists of two 1.5 hour didactic lectures and a 1.5-hour computer lab during which students will obtain practical experience in running the relevant computer programs using data from various studies. **Prerequisite:** HGG 630 or permission of instructor.

SUMMER (YEAR 1)**PIBS 830 DOCTORAL DISSERTATION 1 CREDIT**

Required for all PhD candidates. First-year students generally take one credit of doctoral dissertation in their first summer semester then continue in program specific dissertation credit through graduation.

HGG CURRICULUM [BEGINS YEAR 2]**FALL** **5 Credits (Molecular) or 8 Credits (Computational)**

HGG 601	Seminar/Journal Club	1 credit
HGG 631	Genes in Populations	3 credits
HGG 830	Dissertation Research	1 credit

Computational Track:

● HGG 621	Fundamentals of Genetic Epidemiology	3 credits
-----------	--------------------------------------	-----------

SPRING **8 Credits (Molecular) or 8 Credits (Computational)**

HGG 601	Seminar/Journal Club	1 credit
HGG 660	Bioinformatics Theory & Practice	3 credits
HGG 830	Dissertation Research	1 credit

Computational Track:

● EPH 602	Medical Biostatistics II	3 credits
-----------	--------------------------	-----------

Molecular Genetics Track:

◆ HGG 650	Advanced Topics in Molecular Genetics	3 credits
-----------	---------------------------------------	-----------

SUMMER I / SUMMER II **1 Credit**

HGG 830	Dissertation Research	1 credit
---------	-----------------------	----------

(Please note: HGG 830/840 are considered roll-over courses during the Summer Semesters. Only 1 credit will be earned for the entire summer and will be awarded at the end of Summer II.)

● REQUIREMENTS FOR COMPUTATIONAL TRACK, ELECTIVE FOR MOLECULAR TRACK

◆ REQUIREMENTS FOR MOLECULAR TRACK, ELECTIVE FOR COMPUTATIONAL TRACK



YEAR 3**FALL** **5 Credits**

HGG 601	Seminar/Journal Club	1 credit
HGG 680	Genome Ethics and Public Policy	3 credits
HGG 830	Dissertation Research	1 credit

SPRING **2 Credits**

HGG 601	Seminar/Journal Club	1 credit
HGG 840	Dissertation Research	1 credit

SUMMER I / SUMMER II **1 Credit**

HGG 840	Dissertation Research	1 credit
---------	-----------------------	----------

(Please note: HGG 830/840 are considered roll-over courses during the Summer Semesters. Only 1 credit will be earned for the entire summer and will be awarded at the end of Summer II.)

YEARS 4 AND 5**FALL / SPRING / SUMMER** **24 Credits**

HGG 601	Seminar/Journal Club	4 credits
HGG 681	Human Genetics Clinical Rotations	1 credit
HGG 689	Teaching Practicum	1 credit
HGG 840	Dissertation Research	17 credits
HGG 850	Research in Residence	1 credit

Total requirements:

PIBS course requirements:	24 credits
HGG required course credits:	13 (<i>molecular track</i>)
	16 (<i>computational track</i>)
Seminars/Journal Club:	7 credits
<i>Total includes an exempt semester as explained in the course description</i>	
Dissertation credits:	24 (<i>maximum</i>); 12 (<i>minimum</i>)
<i>**A minimum of 12 dissertation credits must be taken, but no more than 24 are allowed.</i>	
Minimum Credits required for PhD (Graduate School):	60 credits
HGG program total:	62 (<i>molecular track</i>)
	65 (<i>computational track</i>)

HGG COURSE DESCRIPTIONS

HGG 601 SEMINAR & JOURNAL CLUB

FALL/SPRING 1 CREDIT**

The Journal Club is a reading/discussion course convened by a designated HGG program faculty member. Students read new, original papers on a theme, and meet on the 2nd Mondays during the fall and spring semesters to discuss and critically evaluate the papers. Papers are selected by the students, who lead the discussion in pairs. On the 4th Monday of each month, students attend “research in progress” seminars, in which two students each session present 20 minute “conference platform” style talks about some aspect of their research. Attendance is mandatory, unless prior absence approval is requested.

**** *This course is ongoing and required throughout the entire program.* ****

The Human Genetics and Genomics seminar series is held on the 1st and 3rd Monday of each month during the fall and spring semesters, unless otherwise notified. Upcoming seminar announcements are published on the calendar of events as well as university-wide electronic newsletters. Attendance is mandatory, unless prior absence approval is requested.

**** *This course is ongoing and required throughout the entire program.* ****

***PENALTY FOR NON-ATTENDANCE:** *HGG 601 is graded based on attendance and participation in discussion. If a student is unable to attend a journal club or seminar session and preapproval is not received by program faculty, it will be considered an unexcused absence. In this case, the student will need to “make-up” the absence by attending a seminar on campus that has at least some genetics or genomics component to it and write-up a one-page summary. This “make-up” needs to be completed and submitted prior to the end of the semester.*

****NOTE:** *For flexibility sake, due to class conflict, study away or terminal semester, HGG 601 qualifies for a one-time semester exemption, as long as the student earns the appropriate number of total credits required for graduation. No credit will be earned during the exempt semester. The request for exemption may be submitted to the Program Director and approval is required prior to semester registration.*

HGG 621 FUNDAMENTALS OF GENETIC EPIDEMIOLOGY

FALL/YEAR 2 3 CREDITS

This class is a survey of introductory topics in genetic epidemiology and statistical genetics. Basic concepts and methods will be covered including introduction to genetic linkage and genetic association, candidate gene analysis and genome-wide studies, gene-environment interactions, quantitative trait analysis, and rare variant analysis. The course will consist of a combination of lectures and computational laboratory assignments, with some discussion from the primary scientific literature.

HGG 630 VARIATION AND DISEASE**SPRING/YEAR 1 2 CREDITS**

This course provides an overview of the science of genetics, including historical and modern approaches, with emphasis on the underlying mechanisms of human genomic variation and their relation to human disease. After taking this course, the student will be able to list the different types of human genomic variation, explain the mechanism by which each occurs, and discuss the consequences of the variations. Where appropriate, specific examples of human disorders will be related to the variations. Topics include: chromosomal, biochemical, and DNA sequence variation, mitochondrial genome variation and epigenetic effects. The course structure consists of a combination of lectures and discussion of primary literature. Course includes two 1.5 hour lectures and a 1.5 hour computer lab. ***This course is taken in the spring semester as part of the PIBS first year curriculum.***

HGG 631 GENES IN POPULATIONS**FALL/YEAR 2 3 CREDITS**

This class is a survey of topics in population and statistical genetics. Basic concepts and methods will be covered including: Hardy-Weinberg equilibrium, sources of variation, population substructure (drift, fixation, differentiation, inbreeding and F statistics), relatedness and heritability, quantitative and qualitative trait loci, selection (natural and artificial), and molecular evolution. The course is lecture-based, but will include readings from the text and primary literature.

HGG 640 FAMILY STUDIES AND GENETIC ANALYSIS**SPRING/ YEAR 1 2 CREDITS**

The focus of this course is the use of families in the study of genetic disorders and traits. Both qualitative and quantitative phenotypes will be studied. Major topics covered include: heritability, heterogeneity, segregation analysis and linkage analysis. By the end of the course, the student will be able to design and carry-out a family based mapping study. The course consists of two 1.5 hour didactic lectures and a 1.5 hour computer lab during which students will obtain practical experience in running the relevant computer programs using data from various studies. ***This course is taken in the spring semester as part of the PIBS first year curriculum. Prerequisite: HGG 630 or permission of instructor.***

HGG 650 ADVANCED TOPICS IN MOLECULAR GENETICS**SPRING/YEAR 2 3 CREDITS**

Students in the Molecular track take this course in spring of year 2. Each spring, the HGG faculty will offer a course on an advanced topic in molecular genetics, typically within specific areas of research interest. Topics will include human microRNAs, the neurobiology of aging, structural variation, modern genome technology, among others. The course structure will consist primarily of discussions and analysis of primary literature. [This course may be substituted by approved basic sciences elective]. ***Prerequisite: HGG 630 or permission of instructor.***

HGG 660 BIOINFORMATICS THEORY AND PRACTICE**SPRING/YEAR 2 3 CREDITS**

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 the 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 gene expression analysis, 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. **Prerequisites:** *Familiarity with genome structure, and the methods and approaches of molecular biology. You will be required to register for and attend a Python workshop and a CCS HPC workshop as part of the course.*

REGISTRATION NOTE: All students must have permission from the HGG Program Office to register for this course. HGG & CAB students are prioritized and subsequent eligible registrations are based on first-come, first-served.

HGG 680 GENOME ETHICS AND PUBLIC POLICY**FALL /YEAR 3 3 CREDITS**

This course will explore current and future applications of human genetics as they pertain to the health and identity of individuals and society. Topics will include the ethical dilemmas facing clinicians, researchers, and the public pertaining to the use of genetic information in healthcare; the role of the media and other extemporaneous factors in influencing the use of human genetic information, and responsible conduct of research specifically with regard to issues unique to genetics. The emphasis will be on real examples and experiences, with a primary goal of helping students explore how their role as a researcher, clinician, and/or citizen will influence and be influenced by genetic information. The course is lecture-based, but will include readings from the text and primary literature.

HGG 681 HUMAN GENETICS CLINICAL ROTATIONS**YEARS 4 or 5 1 CREDIT**

After defending the dissertation proposal, HGG students participate in medical genetics clinic pre-clinical rounds, observe clinical evaluation and counseling, and participate in weekly didactic sessions with faculty and residents.

HGG 689 TEACHING PRACTICUM

YEARS 4 or 5 1 CREDIT

HGG students serve one semester as a teaching assistant for a core course. This experience will include giving at least one lecture, leading small group discussions, and holding regular office hours to discuss student questions. This will generally take place in the student's fourth or fifth year, and will be graded as a one-credit pass-fail course.

HGG 690 ADVANCED TOPICS

ANY 1-5 CREDITS

Contemporary subject matter offerings based upon expertise of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics". Mini-Courses to be offered will be announced prior to each semester.

HGG 699 SPECIAL PROJECTS

ANY 1-5 CREDITS

This course involves special work, lecture or laboratory or a combination as determined by the advisor in accordance with student's individual interest. **Prerequisite:** *Permission of advisor and Graduate Program Director.*

HGG 830 & HGG 840 DISSERTATION RESEARCH

ANY 1-12 CREDITS

Students begin their dissertation research at the end of the first year and complete their course requirements in the second year. In subsequent years, students devote their efforts to original dissertation research. Prior to the oral defense of the dissertation proposal (Qualifying Examination) and admission to candidacy, students register for HGG 830. After successful defense of the proposal, students are admitted to candidacy and register for HGG 840.

HGG 850 RESEARCH IN RESIDENCE

FINAL SEMESTER 1 CREDIT

After completing all requirements for the HGG degree (but prior to defending the dissertation) students register for Research in Residence during the semester in which they anticipate scheduling their dissertation defense (final semester) before graduating.

PHD in HUMAN GENETICS and GENOMICS CURRICULUM (Effective Fall, 2016)

Fall - Year 2			Fall - Year 3			Fall/Spring/Summer Years 4 & 5		
	<i>Credits</i>			<i>Credits</i>			<i>Credits</i>	
HGG 601	Seminar/ Journal Club	1	HGG 601	Seminar/ Journal Club	1	HGG 601	Seminar/ Journal Club	4
HGG 631 [^]	Genes in Populations	3	HGG 680	Genome Ethics & Public Policy	3	HGG 681	Human Genetics Clinical Rotation **	1
HGG 830	Dissertation Research	1	HGG 830	Dissertation Research	1	HGG 689	Teaching Practicum	1
		<hr/>			<hr/>	HGG 840	Dissertation Research	17
HGG 621C+	Fundamentals of Genetic Epidemiology	3			5 cr.	HGG 850	Research in Residence <i>(Final Semester)</i>	1
		<hr/>						<hr/>
		5 cr. M 8 cr. C						24 cr.
Spring - Year 2			Spring - Year 3			TOTAL REQUIREMENTS:		
HGG 601	Seminar/ Journal Club	1	HGG 601	Seminar/ Journal Club	1	PIBS Required Course Credits:		24
HGG 650M	Advanced Topics in Molecular Genetics	3	HGG 840	Dissertation Research	1	HGG Required Course Credits:		
HGG 660#	Bioinformatics Theory & Practice	3			2 cr.	<i>Molecular Track</i>		13
HGG 830	Dissertation Research	1				<i>Computational Track</i>		16
EPH 602C	Medical Biostatistics II	3				Seminar/Journal Club		7X
		<hr/>				Dissertation Credits:		
		8 cr. M 8 cr. C				<i>Maximum</i>		24
Summer I / Summer II - Year 2			Summer I / Summer II - Year 3			<i>Minimum</i>		12
HGG 830	Dissertation Research	1	HGG 840	Dissertation Research	1	Minimum Credits for PhD (UM)		60
<i>(Please note: HGG 830/840 are considered roll-over courses during the Summer Semesters. Only 1 credit will be earned for the entire summer and will be awarded at the end of Summer C.)</i>			<i>(Please note: HGG 830/840 are considered roll-over courses during the Summer Semesters. Only 1 credit will be earned for the entire summer and will be awarded at the end of Summer C.)</i>			HGG PROGRAM TOTAL CREDITS REQUIRED		
						<i>Molecular Track</i>		62
						<i>Computational Track</i>		65

These courses are taken in the spring semester as part of the PIBS first year curriculum:

HGG 630	Variation and Disease	2 credits
HGG 640	Family Studies & Genetic Analysis	2 credits
PIB 705	Biostatistics for Biosciences	3 credits

- C** Required for computational track, elective for molecular track
- M** Required for molecular track, elective for computational track
- X** Total includes an exempt semester as explained in the course description
- **** Clinical rotation can be taken any semester after passing the dissertation proposal defense [Qualifying Exam (QE)]
- +** Includes labs on "Association Analysis"
- ^** Includes existing "lab" exercises on population genetics
- #** Mixture of lecture & laboratory

Additional elective courses at student and mentor discretion.

PROGRAM FACULTY AND ADMINISTRATION

The Steering Committee

The Steering Committee assists the Graduate Program Director in creating policy for the HGG program, overseeing curriculum, faculty membership, and students' progress. Members serve for 4-year terms, with two new members elected by the faculty each year. The current members of the HGG Steering Committee are (year term ends indicated in parentheses):

William Scott, PhD	Chair, HGG Graduate Program Director
Xue Zhong Liu, M.D., Ph.D.	Member (2017)
Gary Beecham, Ph.D.	Member (2017)
John Gilbert, Ph.D.	Member (2018)
Gaofeng Wang, Ph.D.	Member (2018)
Sawsan Khuri, Ph.D.	Member (2019)
Juan Young, Ph.D.	Member (2019)
Abigail Hackam, Ph.D.	Member (2020)
Liyong Wang, Ph.D.	Member (2020)

Student Representatives

In an effort to bridge the needs of the students and the Steering Committee, student representatives will also serve. At the first Journal Club meeting of the fall semester, one student representative and one alternate will be nominated and elected to serve a one-year term. Listed below are the current representatives through summer 2017:

Feifei Tao	Student Representative
Chong Li	Alternate Representative

THE GRADUATE PROGRAM FACULTY

Human Genetics and Genomics graduate faculty membership is open to all University of Miami full-time faculty members with research programs relevant to human genetics. Inter-departmental faculty members who have active research programs related to human genetics in other departments are also part of our graduate faculty.

Our list of program faculty includes the following members:

Nagi Ayad, PhD	Associate Professor, Psychiatry & Behavioral Sciences
Gary Beecham, PhD	Assistant Professor, Human Genetics
Susan Blanton, PhD	Professor, Human Genetics
Gennaro D'Urso, PhD	Associate Professor, Molecular & Cellular Pharmacology
Derek Dykxhoorn, PhD	Associate Professor, Human Genetics
Mohammad Faghihi, MD, PhD	Research Assistant Professor, Psychiatry & Behavioral Sciences
John Gilbert, PhD	Professor, Human Genetics
Abigail Hackam, PhD	Associate Professor, Ophthalmology and Molecular & Cellular Pharmacology
Jennifer Hu, PhD	Professor, Epidemiology and Public Health
Sandra Lemmon, PhD	Professor, Molecular & Cellular Pharmacology
Xue Zhong Liu, MD, PhD	Professor, Otolaryngology, Human Genetics and Pediatrics
Eden Martin, PhD	Professor, Human Genetics
Jacob McCauley, PhD	Associate Professor, Human Genetics
Carlos Moraes, PhD	Professor, Neurology and Cell Biology
LLuis Morey, PhD	Research Assistant Professor, Human Genetics & Cancer Biology
Amanda Myers, PhD	Associate Professor, Psychiatry & Behavioral Sciences
Mitsunori Ogihara, PhD	Professor, Computer Science and Electrical & Computer Engineering
Margaret Pericak-Vance, PhD	Professor, Human Genetics
Stephan Schürer, PhD	Associate Professor, Molecular & Cellular Pharmacology
William Scott, PhD	Professor, Human Genetics
Ramin Shiekhattar, PhD	Professor, Human Genetics & Biochemistry and Molecular Biology
Mustafa Tekin, MD	Professor, Human Genetics
Marjana Tomic-Canic, PhD	Professor, Dermatology
Nicholas Tsinoremas, PhD	Professor, Medicine, Computer Science and Health Informatics
Jeffery Vance, MD, PhD	Professor, Human Genetics
Claes Wahlestedt, MD, PhD	Professor, Psychiatry & Behavioral Sciences
Katherina Walz, PhD	Assistant Professor, Human Genetics
Gaofeng Wang, PhD	Associate Professor, Human Genetics
Liyong Wang, PhD	Research Assistant Professor, Human Genetics
Juan Young, PhD	Assistant Professor, Human Genetics
Grace Zhai, PhD	Associate Professor, Molecular and Cellular Pharmacology
Stephan Züchner, MD, PhD	Professor, Human Genetics

Additional faculty information can be accessed at the Human Genetics and Genomics Graduate Program Website at <http://biomed.med.miami.edu/graduate-programs/human-genetics-and-genomics/faculty-profiles>.

STUDENT ADVISING, DOCTORAL CANDIDACY AND GRADUATION

Developing a Research Project and Training Plan

After selecting a mentor and joining HGG, students should begin creating a training plan and developing ideas for a dissertation project. A key element in this process is the development of an Individual Development Plan (IDP).

Individual Development Plan (IDP)

The IDP is meant to be a tool for the student, mentors, and examination 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 their mentor. HGG has selected the online IDP tool available through the ScienceCareers website (myidp.sciencecareers.org) as the format for student IDPs. During the **summer of the first year of study (e.g. directly after joining a lab and HGG)** each student should create an IDP using the *myIDP* tool and review the results with the student's mentor. This IDP should be **updated annually** and reviewed as part of progress meetings with the examination committee.

Developing a research project

Students are encouraged to start to develop potential research questions as soon as possible, since selection of members of the examination committee is influenced by the research topic and methods to be used. Note that the project is not expected to be completely independent of the mentor's work, but **must contain at least one original aim** developed by the student. As described below under the qualifying examination, this original contribution must be described in the "relative contributions" section of the proposal.

Applying for a Fellowship

Students are encouraged to apply for individual fellowships to support their graduate work. In addition to the NIH and NSF fellowship programs, foundations such as the AHA and others support students working on projects relevant to the mission of the foundations. Applications for such fellowships should take place as early as possible (e.g. during the 2nd year of study, often before the QE/dissertation proposal defense) to maximize the chance of funding. Keep in mind that for the NIH F31, the **training plan** is of equal importance to the **research plan** and requires a great amount of input from the mentor. The IDP will be of great importance in crafting the training plan, and the training plan should explain how the research plan supports the training objectives. **If the fellowship requires a section completed by the program director (e.g. "Additional Educational Information" for NIH F31 applications) please request this section at least 4 weeks in advance of the due date.**

The Examination Committee

During the second year of study, each student in consultation with his/her faculty mentor, will form an examination committee of at least four members (including their mentor). At least 3 members must be Human Genetics and Genomics faculty members, at least one of whom should not be an active collaborator (arms-length) with the mentor and student on the subject of the dissertation. The fourth member must be a graduate faculty member from outside the Human Genetics and Genomics faculty. The mentor must be present at ALL meetings and all four Committee members must be present for the dissertation proposal defense (qualifying examination) and final examination (dissertation defense). At least three Committee members must be available for yearly progress meetings, and if a meeting is held with only three members, the fourth member must agree to allow the meeting to proceed without them. A fifth examiner may be added if desired. NOTE: If a student proposes to have an examiner outside of Miami (requiring travel), the student should also choose someone at Miami, external to the HGG Program, and that committee must consist of five members, to allow for the possibility of an examination without the external to UM member physically present. The HGG program does not provide travel funds for external examiners; such committee members would need to be compensated for travel by the mentor's funds.

When the student forms their committee they must notify the Program Director and the coordinator of the names of their committee members and identify the chair of the examination committee (an HGG faculty member other than the mentor). The composition of the committee will be reviewed and approved by the HGG Steering Committee. While it is not required that the student meet with the committee prior to defending the dissertation proposal, it may be useful to consult each member on the proposal topic (and Specific Aims) to ensure that the scope of the proposed project is likely to be acceptable.

The purpose of the Examination Committee is to:

1. advise the student on his/her proposed research;
2. determine if student merits admission to candidacy based on oral defense of research proposal;
3. after student is admitted into candidacy the examination committee meets at least yearly with the student to evaluate research progress;
4. evaluate the draft of the final dissertation;
5. to meet when the dissertation is completed, to conduct the final oral examination to determine if the student has produced original research results meriting completion of the Ph.D. Program.

Student Progress

In order to remain in good standing with the program, students must maintain an overall 3.0 grade point average and earn no less than a 3.0 (B) grade in each core (required) course as determined by the molecular track and the computational genetics track.

Satisfactory progress is based upon both individual course grades and cumulative grade point average (G.P.A.). The G.P.A. at the University of Miami is based on the four point system (A+=4.0, A=4.0, A-=3.7, B+=3.3, B=3.0, B-=2.7, C+=2.3, C=2.0, C-=1.7, E=0, X=0). The G.P.A. is calculated by dividing the total quality points earned by the credits attempted. No single grade below a "C" is acceptable.

A student will be notified that he/she is not making sufficient progress if his/her cumulative G.P.A. falls below 3.0, or if a single grade below a "C" is obtained in any course. A student will automatically be placed on probationary status if his/her G.P.A. falls below 3.0. The G.P.A. must be raised to at least 3.0 by the end of the next semester or the student will be required to withdraw from the graduate program. A student who receives a grade of "E" or "X" will be placed on immediate probation and may be asked to withdraw from the graduate program. An "I" (incomplete) grade for a course must be converted to a credit grade within two semesters following the receipt of the "I".

Admission to Candidacy:

Written Dissertation Proposal and Oral Defense (Qualifying Examination)

Students orally defend a written dissertation proposal as their Qualifying Examination (QE). Molecular track (wet-lab) students are encouraged to defend by the summer of their 2nd year, but all students must defend by the end of the fall semester of their 3rd year. This proposal should describe the student's proposed research project in sufficient detail to allow the committee to determine its scientific merit. While mentors (and other committee members) may provide feedback on the specific aims and approach (using a level of detail and criticism generally found in a grant review), and the mentors may supply papers and grant applications to be used as resources, **the document should be written independently by the student** and the contributions of each should be clearly stated in the "respective contributions" section. Under no circumstances should the students use wording from these materials or any other resource that is not their own (published articles, internet sites, etc.) without proper attribution.

The overall page limit is 12 pages, not including cover page, references or biosketch and should adhere to the detailed page limits specified below. The document should be prepared using 11 point Arial font, SINGLE SPACED (type density is no more than 15 characters per inch (including spacing) and 6 lines per inch), with 0.5" margins on all sides using standard paper size (8.5" X 11"). The proposal generally follows an NIH Fellowship (F series) application format, with an expanded literature review:

1. Cover/Title Page (1 page): Title of Proposal, Student's name, mentor's name, committee member's names, date of the oral presentation. This page must also include an abstract (300 words) stating the main scientific question or problem to be addressed, hypotheses and brief outline of proposed experiments to test them.
2. Specific Aims (1 page only): Clearly state the questions and hypotheses and how you propose to address them. Include a one or two paragraph introduction to the study, a statement of the overall research question and 2-3 specific aims (with a brief summary of the approach for each) that will be completed to address the question.
3. Critical Review of the Literature (3 pages): Include background and significance. Review the pertinent literature on the chosen research topic describing in brief the historical background, the knowledge gaps, the current research leading to the proposed questions, and the basis for the hypotheses.
4. Research Strategy (total 6 pages): Describe the overall approach, methodology, and analyses that will be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted. Include anticipated results and alternative strategies, as well as relevant preliminary data (figures, tables, charts and diagrams). If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work. Include any courses that you plan to take to support the research training experience.
5. Bibliography of References Cited (no page limit): Provide a bibliography of any references cited including the names of all authors, the article and journal titles, volume number, page numbers, and year of publication. Insert at the end of the research strategy.
6. Respective Contributions (1 page): The proposal must be written independently by the student, but the mentor (and other collaborators) may help shape specific aims and provide advice on specific aspects of the approach. The respective contributions of the student and mentor (and any key collaborators) should be outlined in this section. **At least one aim must be highlighted as the student's own unique contribution to the project.**
7. Goals for Training and Career (1 page): The student should provide a description of his/her overall career goals, and how the proposed research project will enable achievement of these goals.
8. NIH Fellowship Format Biosketch: Students should complete the **NIH fellowship-format biosketch** (including the section academic record) and include at the end of the proposal. *NOTE: This biosketch format is different from that used in R01 type applications, and is the one specified for F31 NRSA applications.*

This proposal should be provided to the examination committee **no later than one week before the pre-scheduled oral examination**. The oral examination will be chaired by a committee member other than the student's faculty mentor, and selected by both the student and mentor from among the HGG faculty members. The faculty mentor will not participate in the oral examination (but will be allowed to participate in the subsequent committee discussion of whether the student passed). The Graduate Program Director will be present to observe the oral examination* to ensure consistency of the rigor of the questions asked (possibly by asking additional questions in areas not covered by the committee), and to clarify procedures or potential outcomes of the examination. The oral examination is a closed meeting that is restricted to the student, the examination committee members and the Graduate Program Director.

**Note: The Program Director is required to attend all Qualifying Examinations and his schedule must be considered when evaluating calendar options, prior to finalizing a date/time for this meeting. The Program Coordinator may assist with scheduling when necessary.*

The oral examination is conducted in a three-hour block. The first 60-90 minutes will be the general knowledge oral exam based on background material and core coursework. The student should prepare a 10-15 minute overview of the project, including the study rationale, primary research question, and background material, which will be presented prior to the general knowledge examination. The next 90-120 minutes of the oral exam will focus on the written dissertation proposal, focusing on the specific aims and methods. The student should prepare a 10-15 minute overview of the specific aims of the project and any preliminary data in support of those aims. The committee may choose to examine the student after each aim is presented, or after all aims and preliminary data are presented. The examination is evaluated by each committee member using the standard rating matrix found on page 29. The student must pass BOTH PARTS to pass the exam.

The format of the exam, will be a discussion/examination with questions during and following the presentation of the background material and each specific aim. The examination will be graded pass/fail, generally based on consensus of the examination committee; the student's mentor may participate in the discussion, but not the final committee vote on the pass/fail grade. There are three potential outcomes:

- 1) Pass, and the student will be admitted to candidacy.
- 2) Pass, with conditions; no redefense needed. For example, revision to the written document may be required to address the concerns of the committee, or the student could be required to write a short report on an area that he/she showed deficiencies during the exam. These conditions would need to be addressed within a period of time set by the committee. Once the revisions have been completed, the committee must approve removing the condition from the passing grade. Should revisions fail to satisfy the committee, the committee may request a second round of revisions prior to allowing the student to proceed with the project.

- 3) Fail and redefend. The student is given one chance to revise and redefend the proposal, no later than the end of the Spring Semester, year 3. Failure to pass the exam on the second attempt results in the dismissal of the student.

Should a consensus decision not be reached on the grade for the examination, the chair of the examination committee will prepare a report summarizing the differing points of view of the examiners for consideration and discussion by the Steering Committee. The student's status will then be decided by majority opinion of the Steering Committee. Extension of the spring, Year 3 deadline for completing the dissertation proposal and oral defense (Qualifying Exam) may be granted by the Graduate Program Director after consultation with the Steering Committee.

The Chair will take notes on the examination and in a timely manner (within two weeks of the examination), provide a written summary (email is fine) of the results to the student and the HGG Program office, using the standard format provided on pages 30-31. The summary will provide further guidance for the student's continued progress. In the event the Committee Chair is unable to fulfill this HGG Program and Graduate School requirement, the student's mentor may be requested to complete the summary and submit accordingly.

Successful completion of the dissertation proposal defense fulfills the Graduate School requirement for a Qualifying Examination and results in admission to candidacy for the Ph.D. in Human Genetics and Genomics. An application for *Admission to Candidacy for the Ph.D.* will be presented to the Graduate School once the HGG Program Office has received the Committee's written summary approving the candidacy.

Annual Progress Meetings & Reports

Once students pass their Qualifying Examination, annual progress meetings are required, and ultimate scheduling is based on their Committee's recommendation (perhaps more often than once-a-year). One week prior to each progress meeting, students will be required to submit a 2-page written progress report (exclusive of references) for their Committee's review. This document should be structured aim-by-aim and will follow the NIH Progress Report format. Peer-reviewed manuscripts (submitted, in press, or published) may be included with the report as an appendix. It is recommended that students share this progress report with their mentor prior to submitting to the rest of their Committee.

At each committee meeting, the students' progress towards graduation will be discussed, covering the following areas: 1) required coursework; 2) clinical and teaching practicum; 3) research results and publication and 4) responsible conduct of research [e.g. reviewing laboratory notebooks, discussing authorship on publications, data security and integrity].
Note: the student's mentor must be present at ALL Committee meetings.

Requesting Sufficiency

Students must request sufficiency to write the final dissertation document and schedule the dissertation defense. The initial request must be made in-person at a regular committee meeting. This request should be made only after all proposed experiments and data analyses for specific aims have been completed. In some cases, a committee may request additional information prior to granting sufficiency; in this case, the eventual approval (after such information is provided) may take place by email. The student should provide the following materials along with the 2-page progress report:

- 1) A copy of a **submitted** peer-reviewed research manuscript (not review article) on which the student is the first author. (While a **published** manuscript is required for graduation, a student may be granted sufficiency after submitting at least one manuscript, provided the committee believes it is likely that the manuscript will be accepted for publication prior to graduation).
- 2) An outline of the dissertation showing the components of each chapter.
- 3) A summary of all results (in figure or table form) of the proposed experiments.

If the committee agrees that the body of research is sufficient to comprise the dissertation, the student will be given permission to write the dissertation and schedule its defense. Ordinarily it is expected that the defense of the dissertation will take place within 3 months of being granted sufficiency.

Final Dissertation Defense

With the approval of his/her examination committee, each candidate prepares a written dissertation and presents the research results at a public seminar*. The dissertation should include data from at least one manuscript, first-authored by the candidate, accepted for publication in a peer-reviewed journal of sufficient quality.

A draft of the dissertation needs to be reviewed and approved by the candidate's mentor prior to dissemination to committee members for review. The committee members will need at least 2 weeks for the reading of the approved dissertation. Therefore, please be sure to allow sufficient time for mentor revision/approval and 2-week committee review prior to the scheduled defense.

Following the seminar, the candidate meets with the examination committee in a closed session to defend the dissertation. This session is chaired by a member other than the candidate's faculty mentor. The examination committee must approve the dissertation as a work of original research meriting the award of the Ph.D. degree in accordance with graduate school policies and procedures.

In extraordinary circumstances, the publication requirement may be waived by a vote of the majorities of both the examination committee and steering committee. Stipends end 4-6 weeks after a successful defense to allow time for revision of the document and final submission of the dissertation to the Graduate School.

**Note: The Program Director is required to attend all public seminars, and his schedule must be considered when evaluating calendar options, prior to finalizing a date/time for this meeting. The Program Coordinator may assist with scheduling when necessary.*

Electronic Thesis and Dissertation

The Office of the Graduate School maintains a website (www.miami.edu/etd) that compiles all matters related to electronic thesis and dissertation (ETD). They require that all students follow a set of extremely detailed rules regarding the format of their final document and this website provides instructions, guidelines, templates, forms, and important dates and deadlines to help students defend and submit their final dissertation and graduate successfully from this doctoral Program.

In addition, the date of the dissertation defense should be scheduled to adhere to established deadlines for graduation, provided on this website. Students are no longer required to turn in hard copies of their dissertation since everything is available electronically. However, they are required to download two forms from the ETD Website. The Certificate of Approval and the Signature Page must be accurately filled out by the student and brought to the defense meeting to be signed by all Committee members. These two forms can be accessed at (http://www.miami.edu/gs/index.php/graduate_school/current_students/electronic_theses_dissertations/forms_to_bring_to_your_defense/doctoral_candidates/).

It is very important that students obtain the most up-to-date guidelines and review all information contained in the ETD website prior to beginning to write the dissertation. The Dissertation Editor, Doreen Yamamoto (grad.dissertation@miami.edu) is also available to address any questions or concerns.

Graduation

It is a Graduate School requirement, and the responsibility of all students, to apply for graduation through CaneLink. This is a requirement of ALL students, regardless of their participation in Commencement, as it is part of the process that finalizes clearance to graduate and degree conferral. Please review the information on the Graduation & Diplomas website and apply at (http://www.miami.edu/index.php/registrar/graduation_diplomas/).

These deadlines, established by the Office of the Graduate School, are included in the semester specific academic calendars (<http://www.miami.edu/index.php/registrar/calendar/>)

and should be adhered to for the appropriate semester that graduation is anticipated. It is the student's responsibility to be aware of these exact dates and to coordinate the dissertation defense accordingly with the HGG Program Office.

Master of Science Degree

The HGG program is a Ph.D.-granting program. If a student must leave the program due to exceptional circumstances (such as illness or change in family status) and a request for a leave of absence is not a feasible alternative, the program will consider granting a Master of Science in Human Genetics and Genomics. To become a candidate for this degree, the student must first bring a formal written request to his/her Examination Committee and inform the Program Director (stipend support from the program and/or mentor will stop at this point). The Examination Committee must hold a meeting to evaluate the student's progress and the reason for leaving the program. On the basis of the student's research accomplishments, the Examination Committee decides whether or not to support the request for the Master's Degree and informs the Program Director of this decision. The Program Director, in consultation with the HGG Steering Committee, decides whether to allow the student to write the Master's Thesis and defend it. The Master's Committee, appointed by the Program Director, includes the members of the examination committee and one HGG Steering Committee member. All Master's degree requirements (thesis document, defense to committee, and University paperwork) must be completed within six weeks after permission to write the thesis is granted. Upon oral defense of the thesis, the Master's degree committee can make the recommendation to grant the M.S. degree, subject to final approval by the Program Director.

Appeals Process

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 the graduate program committee. If the student remains dissatisfied with the result of this appeal, she/he may appeal the program decision, in writing, to the Associate Dean for Graduate Studies, within 30 days of the program's final decision. Decisions by the Associate Dean are appealable to the Dean of the Graduate School through the filing of a formal Graduate School Grievance http://www.miami.edu/gs/index.php/graduate_school/current_students/.

The Graduate Academic Bulletin is updated and published annually and may be accessed online at <http://bulletin.miami.edu/>. Students are expected to have read and adhere to these rules outlined.

COMPENSATION AND BENEFITS

Stipend / Tuition / Health Insurance / Fellowships

Stipend

All graduate students admitted to the Program in Biomedical Sciences, and who are in good academic standing, are supported financially through their graduate studies. Students will receive an annual stipend in the amount of \$28,500 for 2016-2017 and may not be employed elsewhere. Payroll assignments and details will be managed by the HGG Graduate Program Coordinator. Students are paid on the last day of each month and are required to have direct deposit (set-up in Workday, access as described below).

Tuition Scholarships

All graduate students in good academic standing will also receive a tuition scholarship for the duration of their studies (fully paid tuition). Each semester, the HGG Program Office works in conjunction with the Office of Graduate and Post-doctoral Studies, to submit the appropriate registration and tuition waiver information, on behalf of each student.

Health Insurance

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 of Miami. International students are required to obtain the University of Miami sponsored health insurance. Domestic students who choose to obtain their own insurance (or maintain coverage through their parents or spouse), are required to complete the appropriate waiver in CaneLink (<https://umshare.miami.edu/web/wda/studenthealth/pdf/INSURANCE-WAIVER-SIMPLIFIED-INSTRUCTIONS.pdf>).

Graduate students in good academic standing who elect the University of Miami sponsored health insurance program will have 100% of the individual premium paid by their mentor. In addition, Graduate students may purchase coverage for their dependents and charges are paid directly to the Student Health Services. For additional detailed information, please contact the Student Health Center at 305-284-1652 or review their website information at (http://www.miami.edu/sa/index.php/student_health_center). Insurance cancellation and any registration requests must be renewed each academic year.

Fellowship Award

Students who successfully compete for external fellowships as the named Principal Investigator of the grant, will receive a \$2,000 yearly supplement to his/her stipend for the length of the fellowship award, as long as the fellowship covers at least the NIH or AHA pre-doctoral stipend (more than 75%).

Please note: The University does not offer individual tax advice; however, information regarding student tax issues related to stipends is available by contacting the IRS. Their website can be accessed at (<http://www.irs.gov/uac/Telephone-Assistance>).

Leave of Absence / Vacation Policy

In general, trainees may receive stipends during the normal holiday periods observed by the University of Miami Miller School of Medicine (UMMSOM) (New Year's Day, M.L. King's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day). Graduate students may also receive stipend support for up to 15 calendar days of sick leave per year. They 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.

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 Associate Dean.

This policy applies to full time Ph.D. (graduate) students in good academic standing at the UMMSOM. Ph.D. 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).

GENERAL INFORMATION

Note: Much of the following information can be accessed at the websites through the University of Miami and Programs in Biomedical Sciences. For convenience, some details on several topics are reproduced below:

Plagiarism

Plagiarism is considered academic dishonesty and a breach of journalistic ethics. As defined in Wikipedia, plagiarism is the “wrongful appropriation and stealing and publication of another author's language, thoughts, ideas, or expressions and the representation of them as one's own original work.” It is explicitly outlawed at UMMSM and not tolerated in the HGG Program. **If a student chooses to use an excerpt from a research article or book in classes, journal clubs, qualifying exams, manuscripts, abstracts, dissertations, etc., the excerpt must be clearly denoted and appropriately referenced.** Plagiarism is not always easy to define; students who are unsure whether a particular practice is acceptable are urged to discuss the issue with the faculty instructor, mentor, or Graduate Program Director.

Workday & CaneLink

Workday is UM's new state of the art, cloud-based system that replaces the business functions performed in other administrative systems. This interactive system will enable students to better manage their personal information. Users can login to Workday with their CaneID and password to access several features related to HR, payroll and finance. (<https://workday.miami.edu>).

CaneLink is the student information system that is currently available to advisors, faculty members, admitted and current students. This useful information system has taken the place of student and faculty-related information previously found at **myUM**. Users can log into CaneLink with their existing CaneID and password to access several features related to admissions (<https://canelink.miami.edu>).

International Student and Scholar Services

The Department of International Student and Scholar Services (ISSS) represents the needs and interests of the University of Miami international community and provides support services and programs for international students, scholars, and academic departments at UM. ISSS offers support services related to pre-arrival information, immigration advising (F-1, J-1 status), employment information and authorization, federal income tax filing, assistance with personal and adjustment problems, emergency loans, advocacy, and liaison with sponsoring embassies. For additional detailed information, please contact ISSS (www.miami.edu/internationalservices/).

Student Counseling Center

The UM Counseling Center offers mental health treatment to currently enrolled UM students and promotes the well-being of students through a wide-range of comprehensive mental health services, including short-term individual counseling, career and educational counseling, outreach programs, and various groups aimed at enhancing personal growth and development. For additional detailed information, please contact the center at 305-284-5511 (http://www.miami.edu/sa/index.php/counseling_center).

Security

The UM Medical Campus provides security to monitor building entrances and patrol the campus 24 hours a day. Upon request, security officers will provide escorts to any point on the medical campus (including Metrorail), if students are working late or on weekends. In addition, the vehicle patrol will provide jump-starts and assist students if they are locked out of their vehicle. Medical Campus Security can be reached for Emergencies: **305-243-6000** or 6-6000; non-emergencies at 305-243-7233 or 305-243-SAFE; Information Hotline / Rumor Control: 305-243-6079; (<http://security.med.miami.edu/>).

IMPORTANT CONTACT INFORMATION

<p>William Scott, Ph.D. <i>HGG Graduate Program Director</i> Hussman Institute for Human Genomics Biomedical Research Building (BRB) 1501 NW 10th Avenue, BRB 414 Miami, FL 33136 w.scott@med.miami.edu Telephone: 305-243-2371</p>	<p>Dori McLean <i>HGG Graduate Program Coordinator</i> Hussman Institute for Human Genomics Biomedical Research Building (BRB) 1501 NW 10th Avenue, BRB 432 Miami, FL 33136 dmclean@med.miami.edu Telephone: 305-243-8779 / Fax: 305-253-2523</p>
<p>Charles Lowman <i>Director, Programs</i> Office of Graduate & Postdoctoral Studies Rosenstiel Medical Science Building 1600 NW 10th Avenue, Room 1128C calowman@miami.edu Telephone: 305-243-8105</p>	<p>R. Nicole Walker <i>Program Coordinator</i> Office of the Graduate School 1252 Memorial Drive, 235 Ashe Building Coral Gables, FL r.walker2@miami.edu miami.edu/grad Telephone: 305-284-4154</p>
<p>Doreen Yamamoto <i>Sr. Dissertation Editor</i> Office of the Graduate School 1541 Brescia Avenue Coral Gables, FL dyamamoto@miami.edu grad.dissertation@miami.edu Telephone: 305-284-4145</p>	<p>Electronic Thesis & Dissertation (ETD) www.miami.edu/etd Telephone: 305-284-4145</p>
<p>Office of the Registrar www.miami.edu/index.php/registrar Telephone: 305-284-2211</p>	<p>Office of Commencement (Graduation & Diplomas) http://www.miami.edu/sa/index.php/commencement/the_ceremony/ Telephone: 305-284-4154</p>
<p>Office of Student Financial Assistance http://www.miami.edu/admission/index.php/ofas 305-284-5212</p>	<p>Office of Student Account Services saccounts@miami.edu http://www.miami.edu/finance/index.php/student_account_services/ Telephone: 305-284-6430 Option 5</p>
<p>Student Health Services 5513 Merrick Drive Coral Gables, FL 33146-5310 http://www.miami.edu/sa/index.php/student_health_center/ Telephone: 305-284-9100 URGENT Care – Medical Campus 3rd floor SCCC – Department of Family Medicine</p>	<p>Behavioral Health Services Department of Psychiatry & Behavioral Health 1120 NW 14 Street, CRB1463 Miami, FL 33136 Telephone: 305-243-2774 / 305-243-6400</p>
<p>Student Counseling Center http://www.miami.edu/sa/index.php/counseling_center/current_students/ Telephone: 305-284-5511</p>	<p>International Student & Scholar Services (ISSS) http://www.miami.edu/sa/index.php/iss/current_international_students/ Telephone: 305-284-2928</p>
<p>Academic Calendars - <i>The HGG Program follows the UM academic calendar. Please check the link for the most-up-to-date information throughout the semester</i> http://www.miami.edu/index.php/registrar/calendar/</p>	<p>Medical Campus Security http://security.med.miami.edu/ Emergencies: 305-243-6000 / Non-emergencies: 305-243-7233</p>

Standard Rating Matrix – QE and Dissertation Defense

Graduate Program:	HUMAN GENETICS & GENOMICS (HGG)				Date:	XXX		
Student Name:	XXX XXX	UM ID:	XXX	Major Code	HGG	Degree	Ph.D.	
Rating of (circle one):	QUALIFYING EXAM	Master's Thesis	DOCTORAL DISSERTATION		Rater Name:	XXX XXX		

	Rating Scale and Explanations*						On target? (Y/N)**	
	1 Needs Improvement	2 Meets Expectations	3 Very Good	4 Exceptional	N/A			
Knowledge of Discipline						→	Y	N
<ul style="list-style-type: none"> • Critical knowledge of relevant literature 							Y	N
<ul style="list-style-type: none"> • Quantitative/ Computational knowledge 						→	Y	N
Comments:								

Responsible Conduct of Research (RCR)						→	Y	N
<ul style="list-style-type: none"> • Appropriate handling of data integrity/ authorship/ collaboration etc. 						→	Y	N
Comments:								

Appropriate Methodology						→	Y	N
<ul style="list-style-type: none"> • Technical/Experimental ability 						→	Y	N
<ul style="list-style-type: none"> • Statistical knowledge 						→	Y	N
Comments:								

Application of Knowledge/Methodology						→	Y	N
<ul style="list-style-type: none"> • Ability to formulate hypotheses 						→	Y	N
<ul style="list-style-type: none"> • Ability to design/analyze experiments 						→	Y	N
Comments:								

Critical Thinking						→	Y	N
<ul style="list-style-type: none"> • Ability to present data clearly 						→	Y	N
<ul style="list-style-type: none"> • Ability to recognize significance of experimental findings 						→	Y	N
<ul style="list-style-type: none"> • Demonstration of critical thinking 						→	Y	N
<ul style="list-style-type: none"> • Ability to respond to questions 						→	Y	N
Comments:								

Effective Written Communication						→	Y	N
<ul style="list-style-type: none"> • Quality of written progress report 						→	Y	N
<ul style="list-style-type: none"> • Overall organization of progress report 						→	Y	N
Comments:								

Effective Oral Communication						→	Y	N
<ul style="list-style-type: none"> • Quality of oral presentation 						→	Y	N
<ul style="list-style-type: none"> • Quality of visual material 						→	Y	N
Comments:								

Overall Quality						→	Y	N
Comment on student's overall progress to date and state your degree of confidence that he or she is progressing successfully to the Ph.D. degree.								

*A rating of NA, or "not assessed" may be given if the student has not had the opportunity to demonstrate this competency at this point in training.

**Is the numerical rating (1-5 or NA) appropriate (or "on target") for this stage of training?

Standard Format – Summary of Dissertation Proposal and Oral Defense (Qualifying Examination)

Student:

Date of Examination:

Committee members attending:

Outcome of Examination: Pass, Pass with revisions requested, Revise and Redefend

Progress in Coursework to Date: State whether the student is making adequate progress in coursework (grade of B or better in all required courses), and is in good standing (GPA 3.0). Are any elective courses recommended by the committee given the research topic or examination performance?

Research Productivity to Date: Comment on whether the research presented in the proposal was considered adequate (or commendable) progress for the beginning of the third year of study.

Responsible Conduct of Research: Summarize the committee's discussion of RCR with the student.

Written Proposal and Oral Defense:

Written Background Material: State whether the committee felt the written background was acceptable or whether revisions were recommended (and what they were).

Written Research Plan: State whether the committee felt the written research plan was acceptable as written, or whether revisions to one or more aims were recommended.

Oral Defense: State whether the committee rated the oral defense (background material and research plan) was acceptable, or whether re-examination was required.

Standard Format – Summary of Dissertation Committee Meeting (Progress Meeting)

Student:

Date of Examination:

Committee members attending:

Progress in Coursework to Date: State whether the student is making adequate progress in coursework (grade of B or better in all required courses), and is in good standing (GPA 3.0). Are any elective courses recommended by the committee given the research topic or examination performance?

Research Productivity to Date: Comment on whether the research presented in the proposal was considered adequate (or commendable) progress for the beginning of the third year of study.

Responsible Conduct of Research: Summarize the committee's discussion of RCR with the student.

Progress Toward Aims: State committee opinion on progress toward each proposed specific aim. If changes are recommended then describe what changes were suggested. If sufficiency was requested, state whether the committee agreed with the request.