

Doctor of Philosophy in Medical Sciences

concentration in

Health Outcomes & Implementation Science Biomedical Informatics

Department of Health Outcomes & Biomedical Informatics
College of Medicine

<http://hobi.med.ufl.edu/>

Student Handbook

Fall 2019 Cohort



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Introduction and Welcome from the Chair of Health Outcomes & Biomedical Informatics

Welcome to the Department of Health Outcomes & Biomedical Informatics, housed in the University of Florida's College of Medicine. We are excited you have chosen to pursue your graduate degree with us.

The College of Medicine is the largest of the six colleges that make up the UF Health Science Center. It is comprised of 28 research-oriented departments and ranks No. 17 nationally among public medical schools according to US News & World Report. The College's mission is to improve health care in Florida, our nation and the world through excellence and leadership in education, clinical care, discovery, and service.

The Department of Health Outcomes & Biomedical Informatics is proud to contribute to the mission of the College through our extensive research portfolio and innovative graduate education programs. Last year our department was awarded \$23.5 million in research funding. Our total annual research budget exceeds \$100 million. Our goal is to continue increasing this amount and remain at the top of the College of Medicine's funded departments.



Our research focuses on evaluating the health effects of public policies and health care and conducting controlled field trials of preventative interventions in community and clinical settings. We are also home to the Institute for Child Health Policy, which focuses on research promoting the health of children, adolescents, and young adults.

Our Health Outcomes & Biomedical Informatics MS and PhD programs allow us to provide you with innovative and specialized training. You will gain a specialized set of tools allowing you to pursue a variety of career opportunities developing, implementing, and evaluating clinical and community-based programs that promote health.

We are very proud of our students and their development into the next generation of health outcomes and policy researchers. Welcome to our department!

Elizabeth Shenkman, PhD
Chair, Department of Health Outcomes & Biomedical Informatics
Director, Institute for Child Health Policy
Associate Director, Cancer Population Sciences, UF Health

Welcome from the Director of Biomedical Informatics

Welcome to the UF College of Medicine's Department of Health Outcomes and Biomedical Informatics as well as the UF CTSI, where I serve as director of biomedical informatics. There is new educational programming for health and clinical informatics and informatics support services for biomedical researchers. This educational programming is primarily targeted at managing and analyzing large medical data sets. The growth in the volume and diversity of biomedical data, including electronic health record data, has accelerated greatly in recent years. Researchers, practitioners, and administrators in the healthcare system are struggling to keep pace with these developments to make the most of these data.



Previously as chief of the University of Arkansas for Medical Sciences' division of biomedical informatics, I established biomedical informatics as an academic discipline as well as directed the informatics services to researchers. My own research investigates the very nature of biomedical information, and its essential components, structures, and context. One particular methodology I have helped to develop, and use frequently, is called referent tracking. My mission and research here at the University of Florida remain much the same.

In the fall of 2017, we welcomed our 1st cohort of Biomedical Informatics Ph.D. students, after having both the M.S and Ph.D. concentrations approved under the Medical Sciences graduate degree offerings. I take pride in both teaching and mentoring, as this is one of the most rewarding treasures in academia.

I hope to build an understanding of informatics as not just a facilitator for other scientists' research but as a science in its own right and as an important part of tracking the benefits of scientific innovation.

I welcome you to the Department of Health Outcomes and Biomedical Informatics, and wish you all the success in your educational pursuits!

William Hogan, MD, M.S.
Director of Biomedical Informatics
CTSI Professor, Health Outcomes & Biomedical Informatics

Welcome from the Education Program Director

Welcome to the graduate program in Medical Sciences with a concentration in Health Outcomes & Biomedical Informatics! I hope this handbook will serve as a resource for you during your journey through your degree.

As the Director of the Health Outcomes & Biomedical Informatics Education Programs, I want to ensure that you have the best possible experience during your time with us. Our Academic Specialist, Corinne Flowers and I are here to support and guide you through the completion of your degree.

Our education programs have a lot to offer, and our high quality and experienced faculty facilitate learning that leads to a foundation for stronger research capabilities, leadership skills, teaching methods and successful tools to help not only clinicians as researchers, but also to help our students prepare for a wide range of careers in the health sciences. I encourage you to pursue as many additional experiences as you can during your time with us.

We have compiled this handbook to serve as a resource for you as you journey through your degree program. We are committed to helping you graduate with an outstanding education and a strong foundation for growth as you move on to the next phase of your career.

I look forward to working with you.



Ryan Theis, PhD
Director, Health Outcomes & Biomedical Informatics Training Education
Assistant Professor, Department of Health Outcomes & Biomedical Informatics

The University of Florida



The University of Florida is one of the nation's largest research universities. It is Florida's oldest university and has been enrolling students at the Gainesville campus since 1906. UF is an important component of Florida's economy, providing over 100,000 jobs throughout the state and having an annual economic impact of over \$12.56 billion.

UF is home to 16 academic colleges and more than 200 research centers and institutes.. It employs nearly 5,000 faculty members and enrolls over 56,000 students per year. UF is one of only 17 public, land-grant university members of the Association of American Universities.

Health Science Center

The UF Health Science Center (HSC) is the country's only academic health center with six health-related colleges (Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine) located on a single, contiguous campus. UF Health Shands Hospital, UF Health Children's Hospital, UF Health Shands Cancer Hospital, UF Health Heart & Vascular and UF Health Neuromedicine Hospital and nine research institutes and centers – UF Health Cancer Center, Clinical and Translational Science Institute, Emerging Pathogens Institute, Genetics Institute, Institute on Aging, Diabetes Institute, Institute for Child Health Policy, Norman Fixel Institute for Neurological Diseases and the Evelyn F. and William L. McKnight Brain Institute – are also located on the HSC campus.

The mission of the HSC is to promote health through outstanding patient care, innovative and rigorous education in the health professions and biomedical sciences, and high-impact research across the spectrum of basic, translational and clinical investigation.

College of Medicine

The College of Medicine is the largest of the six colleges in the HSC. The Gainesville campus is comprised of 28 clinical and basic science departments with over 1,300 faculty members. The Jacksonville campus houses an additional 400 physicians and scientists. The UF College of Medicine works in close collaboration with UF Health Shands Hospitals, the Malcolm Randall Veterans Affairs Medical Center, and several other community healthcare sites and other affiliated hospitals in Florida.

The College's medical education program has graduated over 4,000 MD physicians since its first graduating class in 1960. The College also offers graduate degree programs in Medical Sciences, Biomedical Engineering, Physician Assistant Studies, and the Interdisciplinary Program in Biomedical Sciences, allowing talented researchers and professionals not interested in pursuing an MD the opportunity to pursue careers in medical and health care fields.

Department of Health Outcomes & Biomedical Informatics

The Department of Health Outcomes & Biomedical Informatics is a diverse, multidisciplinary faculty of health services researchers, epidemiologists, biomedical informaticians, economists, biostatisticians, psychologists and social scientists whose goal is to advance the scientific knowledge necessary to improve health care delivery, leverage big data, advance health research, and help the most vulnerable populations. The Department is also the home of the Institute for Child Health Policy, which conducts innovative policy studies and intervention trials to promote the health of children, adolescents and young adults.

The department is home to approximately 25 faculty members and more than 100 full-time research and administrative staff. Faculty and staff information, including contact information, can be found on the HOBI website.



UF Clinical & Translational Research Building

HOBİ Graduate Programs Overview

Our graduate programs are designed to give graduates the necessary knowledge to conduct health outcomes assessments and clinical effectiveness research in a range of biomedical, clinical and community-based research settings. Upon completion of the program, students will understand how to develop and evaluate health interventions, treatments, prevention practices and policies and determine what works on a large-scale level and why.

The curriculum provides training in research methods, methods for translating research into policy and practice, and health policy processes and their influence on health care practices and delivery in both clinical and community settings. Students will learn to evaluate the effects that existing and proposed health policies have on health care access, quality, and costs. They will also gain in-depth exposure to current issues in dissemination research and implementation science. Throughout the curriculum, special focus will be placed on health disparities and vulnerable populations. The structure of the program provides one-on-one mentored research experience with faculty and the opportunity to be a part of ongoing research being conducted in the department. **PhD students in the department of Health Outcomes and Biomedical Informatics are required to be enrolled on a full-time basis after successful completion of the Preliminary Exam.**

Student Mentoring and Guidance

Choosing a Research Mentor

It is recommended that students meet with several faculty members whose research interests coincide with their educational goals before selecting a research mentor. The Education Director will provide advice/recommendations to students about potential mentor matches during the student's first semester. Students will be expected to identify a mentor by the mid-point of their first semester. The student's research mentor will serve as the Chair of their dissertation (PhD) Supervisory Committee.

Students who wish to change research mentors after the mid-point of their first semester may do so by providing a written request to the HOBİ Academic Coordinator or Education Director. To request such a change, the student must be in good academic standing, and both the original and proposed new mentors must be aware of and agree to the change. Research mentor changes can occur for a number of reasons, including a change in research interests or funding availability.

If the change request involves a personality conflict between the student and Research Mentor, students must first meet with the Education Director or other HOBİ leadership before initiating the change request.

Curriculum Committee

The HOBİ Education Curriculum Committee is comprised of HOBİ faculty from both concentrations and two current doctoral students, one from each concentration. The curriculum committee members participate in the evaluation and review of all degree and non-degree educational activities in the department. The committee reviews and votes on new courses, requests from students to transfer credits, and any course modifications. This committee meets monthly.

Student Recruitment and Admissions Committee

The HOBI Student Recruitment and Admissions Committee is comprised of HOBI faculty from both concentrations and two current graduate students, one from each concentration. The committee is charged with the responsibility to review and make decisions on admissions, and to assist in student recruitment methods and efforts. The committee meets monthly.

Supervisory Committee

Supervisory Committees must be selected by the end of the semester in which the student has accumulated 12 credits. This is typically the end of the student's second semester; however, students enrolling in 12 credits their first semester must select their Committee by the end of that semester. The Dean of the Graduate School is an ex-officio member of all Supervisory Committees.

Once the Supervisory Committee has been selected, the student must complete the **HOBI Supervisory Committee Agreement**. The student must obtain signatures from all committee members before submitting the Agreement to the Academic Coordinator. The signed Agreement will be reviewed and approved by the Education Director before the committee is entered into the UF Graduate School system.

The **PhD Supervisory Committee** will be comprised of a minimum of 4 and maximum of 5 members. PhD Supervisory Committee qualifications are as follows:

Member	Member Type	Required to be HOBI faculty?	Graduate Faculty (GFS) Status	Must be tenured or accruing tenure?
1 (required)	Chair/Research Mentor	At least two members of the committee must be HOBI faculty	Required, must have GFS in Medicine	Yes
2 (required)	Co-Chair -or- Member		Required	At least one of the two must be
3 (required)	Member		Required	
4 (required)	External Member	Cannot be HOBI faculty	Required, must be in a different educational discipline with no ties to HOBI	No
5 (optional)	Additional Member	No	GF status not required; requires special approval	No

Students who wish to have a Supervisory Committee Chair different from their Research Mentor must obtain approval from the Research Mentor, Education Director, and the proposed Chair.

Changes in Supervisory Committee members are acceptable until the midpoint of the student's final term as long as the dissertation defense has not occurred. No changes in Supervisory Committee are allowed after the defense.

PhD Curriculum in Health Outcomes and Implementation Science (HOIS)

The PhD in Medical Sciences with a concentration in Health Outcomes & Implementation Science is a minimum 90-credit hour degree program, with 46-50 credits devoted to coursework, outlined below. *Effective Fall 2019*

Course	Title	Credits
Core – 15 credits		
GMS 6822	Measuring and Analyzing Health Outcomes	3 Letter-grade
GMS 6851	Fundamentals of Dissemination and Implementation Research	3 Letter-grade
GMS 6885	Translational Health Research Design	3 Letter-grade
GMS 7906	Grant Writing for Health Outcomes Studies	2 Letter-grade
GMS 7887	HOBİ PhD Research Seminar (2 credits/summer semesters during years 1 & 2)	4 S/U
Research Rigor and Ethics – 2 credits		
GMS 7877	Responsible Conduct of Biomedical Research	1 Letter-grade
GMS 6848	Ensuring Rigor and Reproducibility in Clinical and Translational Research	1 Letter-grade
Statistics Courses – 6 credits		
PHC 6052 or STA 6166	Introduction to Biostatistical Methods or Statistical Methods in Research I	3 Letter-grade
PHC 6053 or STA 6167	Regression Methods for the Health & Life Sciences or Statistical Methods in Research II	3 Letter-grade
Methods – <u>Select 4</u> courses		
GMS 6829	Longitudinal Research Design	2 Letter-grade
GMS 6832	Economic Methods for Evaluating Value in Health Care	3 Letter-grade
GMS 6844	Time Series and Quasi-Experimental Design for Health Outcomes Research	2 Letter-grade
GMS 6813	Pragmatic Clinical Trials	2 Letter-grade
GMS 6846	Meta-Analysis in Clinical, Health Services Research, & Public Health	2 Letter-grade
GMS 6803	Data Science for Clinical Research	3 Letter-grade
GMS 6850	Foundations of Biomedical Informatics	3 Letter-grade
PHC 6020 or PHC 6022	Clinical Trial Methods or Design & Conduct of Clinical Trials	3 Letter-grade
Health Outcomes Courses – <u>Select 1</u> course		
GMS 6833	Health Outcomes Research in Vulnerable Populations	3 Letter-grade
GMS 6835	Health Outcomes Research in Children	3 Letter-grade
GMS 6812	Health Outcomes Research in Cancer	3 Letter-grade
GMS 6802	Health Outcomes Research for Chronic Diseases	3 Letter-grade
Implementation Science Foundations Courses (Minimum 3 credits)		
GMS 6852	Community Engaged Research for Clinical Effectiveness and Implementation Science Studies	2 Letter-grade
GMS 6836	Foundations of Learning Health System Research	1 S/U
GMS 6853	Applied Topics in Implementation and Dissemination Science	3 Letter-grade
Advanced Electives – 9 credits -		
Research Credits – 40 - 50 credits		
GMS 7979 & GMS 7980	Advanced Research Research for Doctoral Dissertation	40-44 S/U
Total:		90

Biomedical Informatics PhD Curriculum

The PhD in Medical Sciences with a concentration Biomedical Informatics is a minimum 90-credit hour degree program, with at least 39 credits specific to the BMI concentration.

Course	Title	Credits
Core – All Required (20 credits)		
GMS 6803	Data Science for Clinical Research	3 Letter-grade
GMS 6804	Translational Bioinformatics	3 Letter-grade
GMS 6805	Introduction to Applied Ontology	3 Letter-grade
GMS 6850	Foundations of Biomedical Informatics	3 Letter-grade
GMS 7877	Responsible Conduct of Biomedical Research (Formerly GMS 7003)	1 Letter-grade
GMS 6806	Security and Privacy in Clinical Research	3 Letter-grade
GMS 7887	HOBID PhD Research Seminar (2 credits/summer semesters during years 1 & 2)	4 S/U
Foundation Courses – Select 2 courses (6 credits)		
GMS 6856	Introduction to Biomedical Natural Language Processing	3 Letter-grade
BME 6938	Introduction to Biomedical Image Analysis and Imaging Informatics	3 Letter-grade
CEN 5035	Software Engineering	3 Letter-grade
COP 5725	Database Management Systems	3 Letter-grade
GMS 6822	Measuring and Analyzing Health Outcomes	3 Letter-grade
GMS 7866	Principles of Referent Tracking in Biomedical Informatics	3 Letter-grade
PHC 6405 or PHC 6001	Theoretical Foundations of Public Health Principles of Epidemiology in Public Health	3 Letter-grade
Statistics Courses- Select 1 course (3 credits)		
STA 6166	Statistical Methods in Research I	3 Letter-grade
PHC 6050	Statistical Methods for Health Science Research I	3 Letter-grade
PHC 6052	Introduction to Biostatistical Methods	3 Letter-grade
Advanced Electives – 11 credits subject to mentor approval including but not limited to suggestions below		
CAP 5100	Human-Computer Interaction	3 Letter-grade
CAP 5510	Bioinformatics	3 Letter-grade
CAP 5635	Artificial Intelligence Concepts	3 Letter-grade
CAP 6610	Machine Learning	3 Letter-grade
COP 5725	Database Management Systems	3 Letter-grade
COT 5405	Analysis of Algorithms	3 Letter-grade
COT 5615	Mathematics for Intelligent Systems	3 Letter-grade
COP 5618	Concurrent Programming	3 Letter-grade
BME 6938	Special Topics: Machine Learning for Health and Biomedical Applications	3 Letter-grade
STA 6167	Statistical Methods in Research II	3 Letter-grade
GMS 7093	Introduction to Clinical and Translational Research	2 Letter-grade
STA 5325	Fundamentals of Probability	3 Letter-grade
STA 6826	Stochastic Processes I	3 Letter-grade
PHC 6053	Regression Methods for the Health and Life Sciences	3 Letter-grade
Research Credits (50 credits)		
GMS 7979 & GMS 7980	Advanced Research Research for Doctoral Dissertation	50 S/U
Total	(90 credits minimum)	

Transfer of Credits/Course Substitutions

The HOBİ Curriculum Committee will consider:

- (1) Accepting previously completed graduate courses in place of HOBİ degree requirements (retrospective Transfer of Credit). This includes courses previously completed at the University of Florida.
- (2) Allowing degree credit for courses not included in HOBİ degree curriculum (prospective Course Substitutions).

All transfer of credit and course substitution requests must follow the UF Graduate School guidelines for graduate degrees. Only graduate level courses (5000-7999) with a grade of B or higher will be considered for transfer of credit. No more than 30 credits from a previously earned MS degree can be transferred to a PhD. An MS degree earned in a discipline other than HOBİ will require special consideration before being considered for transfer of credit.

Before submitting a request, students should review all official UF PhD guidelines.

Transfers of credit and course substitutions are requested by submitting the ***HOBİ Course Substitution/Transfer of Credit Form*** to the Academic Coordinator. A rationale for the substitution(s) that explains how the course(s) relate directly to the HOBİ degree must be included. The student's Research Mentor must approve and sign each request.

Transfer of Credit requests must be submitted during the first semester of enrollment. Previous academic transcripts and syllabi for all courses proposed for transfer of credit must be included. **Course Substitution requests** must be submitted at least one month before scheduled registration for the proposed course.

The HOBİ Curriculum Committee will review all requests and approve, deny, or request more information. Students will be informed of the approval/denial of prospective course substitution requests by the start of the semester of the proposed course. Students have the right to appeal any elective Course Substitution not approved by their mentor. Appeals will be reviewed and voted on by the Curriculum Committee. Appeals should be submitted to the Academic Coordinator on the HOBİ Course Substitution/Transfer of Credit Form and be accompanied by the syllabus and rationale for how the course directly applies to the student's curriculum.

All requests approved by the Curriculum Committee are then submitted by petition for approval by the Dean of the Graduate School before credits will officially be transferred or substituted.

Registration

Prior to the start of each semester, students must meet with their Research Mentor to review their academic progress, plan their courses for the next semester, and complete the **HOBİ Course Registration Form**. Courses being offered will be posted on the HOBİ Current Course Schedule site. Deadlines for submission of the Course Registration Form will be communicated by e-mail each semester by the Academic Coordinator.

The Academic Coordinator will complete the student's registration. Students will receive e-mail confirmation when their registration is complete.

Elective Courses

Required advanced electives taken by PhD students are chosen at the discretion of the student and the Research Mentor. Elective courses are intended to augment the student's specific area(s) of interest and may be taken from departments across campus. They also provide the flexibility for a student to enroll in a graduate certificate program of interest if desired. PhD students may also propose to take additional courses as electives beyond their degree requirements, with the approval of their Research Mentor. These courses will not count towards the credits required for completion of the degree.

Research Courses

PhD students in the Health Outcomes and Implementation Science track will complete a minimum of 40 credits of independent research study. PhD students in the Biomedical Informatics track will complete a minimum of 50 credits of independent research study.

GMS 7979 Advanced Research can be taken after completion of the student's core courses, and in the summer semesters if needed. After the preliminary exams, students may also register for **GMS 7979 Advanced Research** until successful defense of their dissertation proposal.

GMS 7980 Research for Doctoral Dissertation must be taken after a student successfully defends their proposal, and must be taken continuously until they graduate. During their graduation term, students must maintain a minimum registration of **GMS 7980 Research for Doctoral Dissertation** of 3 credits if their graduation term is either fall or spring, and a minimum of 2 credits if they are graduating in the summer.

To enroll in GMS 7979, or GMS 7980, students must initiate the process several weeks prior to registration. To enroll each semester, students must:

- Complete a Thesis/Dissertation **Research Contract**. This will outline the contact time with the instructor (Research Mentor), time allocated by the student, and specific plans and deliverables to be completed during the semester.
- Submit the signed Contract to the Academic Coordinator for registration.

At the end of each semester, students must have completed the work in the contract in order to receive credit (S/U). Incomplete deliverables will result in the student receiving a grade of Incomplete ("I"), which will be changed once the student has completed the work.

PhD Admission to Candidacy

All PhD students will complete the following examinations before they can be admitted to candidacy.

- I. Preliminary Examination, a written examination assessing knowledge of the program's core curriculum (via course objectives),
- II. Qualifying Examination, assessing knowledge of the student's chosen general area of research
 - a. Written Portion
 - b. Oral Portion
- III. Dissertation Proposal
 - a. Written Proposal
 - b. Oral Proposal Defense

Students first complete the Preliminary Examination, offered and assessed regularly once per year after the Summer C semester by the HOBİ Examinations Committee (and could be offered again in the fall if needed), followed by the Qualifying Examination, offered by the student's Supervisory Committee after the student selects a general topic for his/her dissertation. The final step in the candidacy assessment process is defense of the dissertation proposal itself.

Requirements to Initiate Candidacy Process

To be eligible to take the Preliminary Examination, the first part of the candidacy assessment process, students must:

- (1) Complete all Core, Research Rigor & Ethics, Statistics, Methods, Health Outcomes , and Implementation Science Foundations PhD coursework for **HOIS** (33-37 credits) or Core, Foundation, and Statistics coursework for **BMI** (25 credits), excluding the seminar courses.
- (2) Obtain approval from their supervisory committee
- (3) Achieve a minimum 3.00 GPA and be in good academic standing

In addition, students should also complete all human subject trainings required by the University of Florida's IRB-01 prior to the preliminary examination. This includes:

- (1) IRB-01 local training (via www.my.UFL.edu)
- (2) HIPAA training (via www.my.UFL.edu)
- (3) CITI training (via www.my.UFL.edu) OR NIH training (<https://phrp.nihtraining.com/users/login.php>)

From these training materials, students should be able to demonstrate an understanding of basic considerations and responsibilities when conducting human subject research. Students should also be able to describe the following: **Health Insurance Portability and Accountability Act**, The **Nuremberg Code**, The **Belmont Report**, and the **Tuskegee Syphilis Experiment**.

Students interested in taking the Preliminary Examination should first obtain signed permission from all members of their Supervisory Committee, and the Chair of the Supervisory Committee should request (in writing) permission for the student to take the examination to the HOBİ Education Director

and Academic Coordinator no later than two months prior to the examination date (see below for scheduling of the exams).

I. Preliminary Examination

The Preliminary Examination is intended to determine if the student is well prepared in fundamentals of the core content areas of the degree program, and is ready to launch independent dissertation research. There are two Preliminary Examinations administered to PhD students in the department – one for Health Outcomes and Implementation Science (HOIS) and one for Biomedical Informatics (BMI). The Preliminary Examination is administered by the HOBI Examination Committee and is offered at the end of the Summer C term (before the fall semester begins), with a potential end-of-fall semester examination offered for students who fail their first examination attempt, or for other special circumstances.

Format: Proctored, in-class written (short essay) examination

Students have 6 hours to complete the Preliminary Examination. The Preliminary Examination is administered in two 3-hour blocks with a 30 minute break in between. Each Preliminary Examination (HOIS and BMI) is comprised of three short answer essay questions, which are developed by all HOBI graduate faculty. Questions reflect the HOBI PhD program's course objectives.

Assessment: The entire HOBI Graduate Faculty is responsible for reviewing and grading students' completed Preliminary Examinations, as follows:

- 1) The Director of Education will assign 2 to 3 graduate faculty members to review all student responses for a particular question.
- 2) Preliminary Examination responses will be discussed in the August Graduate Faculty meeting. The faculty members assigned as reviewers will lead discussion on their assigned question.
- 3) All Graduate Faculty present at the meeting will vote on passing decisions for each student response, designating one of three outcomes for each student: (1) Pass; (2) Partial Pass (the student must retake one or more questions); and (3) Fail. Voting is contingent on the presence of a quorum at the Graduate Faculty meeting (at least two-thirds of Graduate Faculty present).
- 4) Review time for examination responses typically takes between 8 and 10 business days. Any extraordinary delays will be communicated to the student in a timely fashion. Within this time period, the Director of Education informs students and their respective Supervisory Committee Chairs of the decision.

If a student fails the preliminary examination, including a partial pass, the student is allowed to retake the examination one more time only. (If a partial pass, the student will retake only the portion of the examination related to the failed questions.) In the event of a second failure, the Chair of the student's Supervisory Committee may petition the HOBI Department Chair and Director of Education for a third chance if there are extenuating circumstances.

II. Qualifying Examination

The Qualifying Examination is the second phase of assessing the suitability of the HOBI student to be formally admitted to PhD candidacy. It should take place within one year of successful completion of the Preliminary Examination.

The Qualifying Examination will be a 2-part examination, administered by the student's Supervisory committee and uniquely tailored to the student's specific area of focus and interest within Health Outcomes and Biomedical Informatics. In preparation for this portion of the examination, students are asked to submit a list of 30-50 references that are directly relevant to their dissertation topic. This list should include seminal as well as current research. Students are encouraged to use readings covered in specialty classes that relate to their topic, to ask members of their Supervisory Committee for recommendations, and to complete a thorough literature review. Students should also submit a one-page narrative that describes their general dissertation topic in Health Outcomes or Biomedical Informatics. This narrative paragraph should describe the significance of the dissertation topic and its position in the broader literature. The list of references and narrative are due to the Supervisory Committee (and HOBI Education Administration) approximately **two months** prior to the date of their Qualifying Examination. This list of references, once approved by the Supervisory Committee, will be the foundation for the Qualifying Examination. Students will use this as their reading list and subsequently demonstrate mastery of this list in answering the questions for this section of the examination.

The Qualifying Examination will be comprised of:

1. Written Qualifying Examination: Take-home, open book essay examination

Students will have 48 hours to complete the Written Qualifying Examination. Students will check out and check in the written examination from the HOBI Academic Coordinator. The written examination will be comprised of 3-4 essay questions, from which students will select two questions to complete and submit. Essay questions will be developed by the student's Supervisory Committee and will be specific to the student's area of research focus.

2. Oral Qualifying Examination:

Once the student has completed the Written Qualifying Examination, the Oral Qualifying Examination can be scheduled. The Oral Qualifying Examination must be scheduled 1-10 days following completion of the Written Qualifying Examination.

The Oral Qualifying Examination will be a 2-hour meeting between the student and the Supervisory Committee. All members of the student's Supervisory Committee must be present during the Oral Qualifying Examination. The student and the supervisory committee chair (or co-chair) must be physically present together at the same location. With approval of the entire committee, other members may attend the defense remotely, using modern communication technology per UF Graduate School Policy. The Oral Qualifying Examination will primarily be a discussion of the Written Qualifying Examination, allowing the committee members to follow up on the written questions (and responses) and to expand on other topics related to the content area of the student's chosen dissertation topic, with the primary goal to determine if the student has comprehensive and in-depth knowledge of this content area.

Immediately following the Oral Qualifying Examination, the Supervisory Committee will meet without the student to determine the outcome. The student will be notified of the determination by his/her Chair immediately after the oral examination, or in special circumstances no later than 24 hours after the oral examination (in writing).

Qualifying Examination Outcomes

There are four possible outcomes of the qualifying examination:

1. **Pass**
2. **Conditional Pass:** Student is allowed to proceed to the dissertation proposal, but is required to remediate an area of weakness identified by the Supervisory Committee. The Supervisory Committee will outline an action plan that will be agreed upon by the committee members and the student.
3. **Fail:**
 - a. **With option for reexamination** - The student will be allowed to repeat the examination after remedial work specified by the Supervisory Committee and outlined in a remedial action plan agreed upon by the student. Per Graduate School Policy, at least one semester of additional preparation is required before the student can retake the examination (the examination cannot be retaken during the same semester).
 - b. **Without option for reexamination** - The student will not be allowed to re-take the examination, and thus not allowed to complete the PhD. The Supervisory Committee may recommend completion of a MS degree. A student who fails the examination may petition for re-examination per Graduate School policy.

III. Dissertation Proposal

The Dissertation Proposal is the third and final phase of assessing the suitability of the HOBI student to be formally admitted to PhD candidacy. It should take place within six months of successful completion of the qualifying examination. The dissertation proposal will consist of:

Abstract – 30 lines maximum

The abstract should briefly describe the entire proposed project, including the objectives and the planned methods.

Specific Aims – 2 pages maximum

Specific aims should clearly describe what is being proposed, including the hypotheses that will be tested.

Significance – 2-5 pages

Significance should describe the relevance of the proposed project to the field of Health Outcomes & Biomedical Informatics research. This section should also establish the innovative approach of each of the Specific Aims in the context of a complete review of the existing literature.

Preliminary Studies (optional) – no page limit

Preliminary studies can describe any pilot work that has already been done leading up to the proposed project.

Design and Methods – 5-10 pages

Design and methods must clearly describe the plan for accomplishing the proposed project, clearly addressing each of the Specific Aims. Included in this section must be:

time line, power calculation(s) (if applicable), the statistical tests that will be performed, strengths, and limitations.

Literature Cited – no page limit

Students must also prepare all IRB forms necessary to conduct the proposed research. All studies being submitted to IRB-01 should use the web based [myIRB submission system](#).

An oral dissertation proposal defense will accompany the written proposal. The student will work with their Supervisory Committee Chair to prepare the dissertation proposal. After Chair approval, the student will send it to the Supervisory Committee for review. Once the Committee members agree it is ready for defense, the HOBİ Academic Coordinator will set up a dissertation proposal defense date. The student must submit their final proposal to the committee at least three weeks before the proposal defense date. The student and the supervisory committee chair (or co-chair) must be physically present together at the same location for the proposal defense. With approval of the entire committee, other members may attend remotely using modern communication technology. The Proposal Defense will be an overview of the research proposal that is approximately 30 minutes long supported by visual aids (PowerPoint). It should focus on the proposal topic and methodology.

The Supervisory Committee will then evaluate the written proposal and the oral presentation. Thirty minutes will be given for questions by the Committee, to be answered by the student.

The Committee will meet without the student present to determine the outcome of the proposal defense. The results will be communicated to the student immediately, and to the HOBİ Education Director that same day. Possible results are as follows:

1. Pass with no revisions
2. Pass with minor revisions – the student must revise and submit revisions to all committee members
3. Pass with major revisions – the student must revise and resubmit. At the discretion of the Supervisory Chair, the committee may be reassembled.
4. Not acceptable – student and Chair must meet with the HOBİ Education Director

Any recommended revisions must be completed within 3 months from the time of proposal presentation. A re-examination may be requested but it must be recommended by the student's Supervisory Committee Chair and approved by the Director of Education and Chair of the Department.

Admission to Candidacy

A doctoral student does not become an actual candidate for the PhD degree until granted formal Admission to Candidacy. This admission requires approval from the student's Supervisory Committee, the HOBİ Chair, the Associate Dean for Graduate Education, and the Dean of the Graduate School.

Approval is based on:

- 1) The academic record of the student;
- 2) The Supervisory Committee's opinion on overall fitness for candidacy;
- 3) Successful completion of the Preliminary Examination;
- 4) Successful completion of the Qualifying Examination;
- 5) Successful proposal defense

The ***Admission to Candidacy Form*** will be prepared by the HOBİ Academic Coordinator several days prior to the dissertation proposal defense. The HOBİ Academic Coordinator will give the form to the student's mentor, who will have it signed by Supervisory Committee members after a successful dissertation proposal defense. It is then given to Department Chair or Program Director for signature and sent to the Office of Graduate Education before being forwarded to the Graduate School.

Expectations for Dissertation Work

A doctoral student is responsible for developing and conducting all work leading toward and contributing to their dissertation, as appropriate to their topic and study design. This may include, but is not limited to: literature review, data collection, data management and analysis, and writing. After the student's successful dissertation proposal defense and admission to candidacy, the student and their mentor will establish expectations for developing and conducting dissertation work, which must be approved by the student's Supervisory Committee. Following committee approval, the dissertation expectations will be documented in the student's IDP. As a general rule, any data collection, management, or analysis activities conducted *prior* to the student's admission to candidacy must be approved by the student's Supervisory Committee to be included in the dissertation. In some circumstances, a doctoral student may require the involvement of other individuals in certain data collection, management, or analysis activities that lead toward the dissertation. For example, a student's dissertation topic may require use of data collected by other individuals under the direction of the mentor (e.g., through a project in the mentor's laboratory). In cases where the dissertation requires use of state claims and encounter data that are maintained by the department, it may be necessary for certain data management activities to be conducted by other department staff or faculty who have access to these data. Any exceptions to the student's direct involvement in activities leading toward the dissertation must be approved by the student's Supervisory Committee and documented in the student's IDP.

General Graduation Requirements

Credits

MS students must earn a minimum of 33 credits for the Health Outcomes and Implementation Science concentration or 36 credits for the Biomedical Informatics concentration to obtain a degree. No more than 9 of the 33/36 credits (earned with a grade of B or higher) can be transferred from previous coursework. At least half of the 33/36 credits must be courses within HOBI.

PhD students must earn a minimum of 90 credits to obtain a degree. No more than 30 credits of a master's degree from another institution can be transferred to the PhD program.

Grade Point Average

Students must achieve an overall GPA of B (3.0) or better to be awarded a degree. Grade point averages are computed on all courses at the 5000 level or above and the first 6 semester credit hours of eligible 3000/4000 level course work outside the major.

Grades earned in courses transferred for credit do not count towards the student's grade point average.

Students must also maintain an overall GPA of 3.0 or better throughout their graduate career. Students who fall below a GPA of 3.0 during any semester may request an exemption to remain in the program one additional semester. This exemption must be requested through the student's Research Mentor and approved by the Curriculum Committee. If the exemption is granted and the student fails to upgrade their GPA during the following semester, or falls below a 3.0 GPA in any subsequent semester, the student is subject to being dismissed from the program.

Policies and Resources

Conduct and Honor Codes

We expect our students to maintain the highest levels of honesty, integrity, and ethical conduct. Students are expected to be familiar with and abide by all UF [Student Conduct and Honor Codes](#). Any incident involving violation of these codes - including fraud, plagiarism, and cheating - will not be tolerated and may be grounds for dismissal from the program.

- *Fraud* typically involves intentional and deliberate misuse of data leading to falsification of results. This includes the fabrication of data or omission or concealment of conflicting data.
- *Plagiarism* is the use of someone else's work or ideas and passing them off as one's own. This includes the use of material with only slight modification or without proper credit given to the original source.

Ignorance of UF student honor codes by a student will not be an excuse for any actions that occur in violation. All incidents will be handled according to the guidelines of the UF Office for Student Conduct and Conflict Resolution.

Counseling & Wellness Center

The UF [Counseling & Wellness Center](#) provides a number of counseling services for students. Their staff is comprised of licensed psychologists, licensed mental health counselors, clinical social workers, psychiatrists, psychiatric fellows, psychiatric nurse practitioners, postdoctoral associates, psychology interns, counselor education interns, and practicum counselors. All of their staff are generalists and see students presenting with a variety of issues. The Counseling & Wellness Center website also contains many [Self-Help Resources](#) that are available 24 hours.

Dates and Deadlines

The [Graduate School Academic Calendar](#) publishes all annual critical dates and deadlines. This includes deadlines for drop/add, fee payments, thesis/dissertation submission, and graduation.

The Graduate School also sends notification of important deadlines and critical dates via the [Graduate Student Listserv](#). This Listserv also keeps all UF graduate students informed of academic, research, and financial opportunities. All currently enrolled graduate students are added to the listserv by their GatorLink e-mail account; there is no way to opt out of the listserv.

E-mail and Off-Campus access

HOP graduate students are **required** to use their GatorLink e-mail as their primary e-mail address to ensure they receive important information from the University and department. GatorLink e-mail addresses are not allowed to be forwarded to a non-ufl.edu account. This can result in important information being lost, as third party providers often block forwarded messages or designate them as SPAM.

If you need to access UF web resources from off-campus, such as online journals for which UF has

purchased a license/subscription, you must log into via the [UF Health Science Center VPN](#) or [UF Gatorlink VPN](#). This will allow your off-campus computer to act like it is at UF, so you can access sites that are restricted to UF computers and Gatorlink-registered users.

HIPAA Training

In addition to conduct and honor codes, we require our graduate students to maintain active HIPAA General Awareness training (PRV800) training for the duration of their graduate degree.

Individual Development Plan (myIDP)

All Graduate Students in the College of Medicine are required to complete an Individual Development Plan on an annual basis. This plan must be submitted by December 1 of each year. Once you have completed this form: <http://myidp.sciencecareers.org/> please upload a copy of your report to our website submission tab: <https://hobi.med.ufl.edu/education/individual-development-plan-myidp/>

Funding for Professional Travel

The Health Outcomes and Biomedical Informatics Student Travel Award provides up to \$500 per student, per year, to four students: two from the Health Outcomes & Implementation Science concentration and two from the Biomedical Informatics concentration.

Any student whose planned travel meets the criteria outlined below should submit a HOBİ Student Travel Award application to the Academic Specialist **at least 90 days in advance of the planned trip**. Applications are considered on a case-by-case basis by the faculty in the appropriate division.

Travel to conferences, symposia, and special research opportunities is essential for the professional development of advanced research students. In order to assure funds benefit the largest possible cross section of graduate students, priority will be given to doctoral-level students who are:

1. Invited to give major talks and are not offered funds from the meeting organizers, **-or-**
2. In the final year of their programs **and** are presenting work at a national meeting where they will be evaluated by potential employers, **-or-**
3. Offered a unique opportunity to conduct research on material at an off-campus site or to be involved in a special collaboration that may be available only under a limited set of circumstances.

Supplemental travel funding opportunities outside the department:

- **UF Graduate Student Council Travel Grants:** The UF Graduate Student Council provides travel grants of up to \$350. Eligibility criteria and application details are found at: <http://ufgsc.org/index.html>
- **UF Research and Graduate Programs Travel Grant:** The Office of Research and Graduate Programs (RGP) has a program to supplement student travel when other funding sources are insufficient. RGP guidelines for travel funding cap awards at \$450 per trip and require 1:1 matching funds from the department and/or college. These funds are primarily for assistance with the cost of travel, particularly airfare. These grants are one-time awards to Graduate Students. **RGP cannot provide any retroactive reimbursements.** <https://cals.ufl.edu/docs/pdf/students/travel.pdf350>

- **College of Medicine Office of Graduate Education:** If you are the presenting author, you are eligible for at least \$300 per fiscal year. Travel is paid through your mentor or the department, and then the Office of Graduate Education transfers appropriate funds to the account that funded the travel once the expense report has been cleared through the university accounting. **The OGE does not provide up-front funding, nor does it directly reimburse students.** <https://biomed.med.ufl.edu/students/student-reporting-tools/student-travel-funding-request/>
- **Center for European Studies:** These grants are open to all UF graduate students, regardless of discipline, although the **subject** of the research or talk must be related to Europe or European Studies. Application instructions and deadlines can be found at: <https://ces.ufl.edu/fellowships-2/student-fellowships/graduate-student-travel-grants/>

Health Insurance

Effective summer 2014, UF now requires all newly admitted students, both domestic and international, to show proof of health insurance. Students can purchase the UF Student Health Insurance Plan, administered through the [UnitedHealthcare StudentResources](#) or provide evidence of comparable coverage from an outside entity.

UF graduate students on an appointment as a graduate assistant, teaching assistant or research assistant, or those on a Predoctoral Fellowship appointment may also qualify for the [GatorGradCare](#) health insurance plan.

Housing

On-campus housing is available on a limited basis for both single and married students who are admitted or enrolled and maintain proper academic progress toward a degree at the University of Florida. Generally a waiting period of at least several months is encountered. Contact [Housing & Residence Education](#) for more information. This office can also provide information on off-campus rental options.

Leave of Absence

Students who do not enroll at UF for two consecutive terms, including the summer term, must apply for readmission to the Graduate School. Readmission is not guaranteed.

Requests for a leave of absence are evaluated on a case by case basis. Graduate Research Assistants must notify their academic advisor, supervisor and the Academic Coordinator of any intended leave of absence.

Personal time is paid up to five days per semester appointment, which is credited at the beginning of each semester. This leave may not be used in less than one-day increments, and leave is not cumulative from semester to semester. Graduate assistants should contact their supervisor to schedule leave.

For more information, see <https://benefits.hr.ufl.edu/my-benefits/explore/eligibility/ga/>

Libraries

The [Health Science Center Library](#) is located in the Communicore Building of the Health Science Center. It has a large collection of journals, texts, and reference materials, over 100 computers, and ample study space. A Gator1 card is required to check out materials.

Health Outcomes & Biomedical Informatics, like other study programs, is assigned a specific librarian liaison who can help you find resources in your particular subject area. A list of librarian liaisons in the Health Science Center Library can be found at <http://library.health.ufl.edu/services/library-liaisons/>.

The HOBİ librarian liaison has prepared a guide to library resources for HOBİ students at <https://guides.uflib.ufl.edu/hobi>

There are also several other libraries across the main UF campus, including [Library West](#), which houses the Humanities, Business and Social Sciences holdings, and [Marston Science Library](#), containing the Agriculture, Life Sciences, Engineering, Physical Sciences, Mathematics and Earth Sciences holdings.

A list of subject specialists for other libraries can be found at <http://apps.uflib.ufl.edu/staffdir/SubjectSpecialist.aspx>.

Sexual Harassment

It is the policy of the University of Florida to provide an educational and working environment for its students, faculty, and staff that is free from sex discrimination and sexual harassment. Sex discrimination and sexual harassment will not be tolerated, and individuals who engage in such conduct will be subject to disciplinary action. The University encourages students, faculty, staff, and visitors to promptly report sex discrimination and sexual harassment.

The Division of Student Affairs provides more information on [Sexual Harassment](#) definitions, policies, and procedures for reporting.

Traffic and Parking Regulations

All UF students can register a car and obtain a parking decal. Eligibility for parking decals is determined by the student's local address and academic classification. To obtain a parking decal:

UF Transportation and Parking Services

1273 Gale Lemerand Drive

Gainesville, FL 32611-2400

352-392-7275

<http://www.parking.ufl.edu>

UF Police Department

[UFPD](#) should be contacted for any non-emergency situations occurring on campus by calling 392-1111. All emergencies should be reported by dialing 911.

The Student Nighttime Auxiliary Patrol ([SNAP](#)) is a free nightly service for students that can provide an escort after dark to anywhere on campus. They can be reached at 392-SNAP.

Work-related Injuries (Worker's Compensation)

For non-serious injuries you should first contact the Worker's Compensation office at 392-4940 for assistance filling out the forms. You may then go to the Student Infirmary or another designated site for treatment. For serious injuries you should go directly to the Shands Emergency Room for treatment. Upon arrival you should inform the admitting clerk of your graduate status and that the injury is work related. As soon as possible after treatment, contact the Worker's Compensation office so that a worker's compensation form and accident/injury form can be prepared. After year 1, you should report to your departmental worker's compensation representation (the department in which your payroll is processed).