Academic Assessment Plan

University of Florida

Academic Affairs

Academic Colleges

College of Medicine

Interdisciplinary Studies - BioMedical Sciences

####### Medical Sciences (MS)

######## MS Program Mission

Interdisciplinary Program in Biomedical Sciences

The mission of the Interdisciplinary Program in Biomedical Sciences is to provide a predoctoral educational experience that will train experimentalists and scholars prepared for a wide range of careers in biomedical science. The curriculum is designed to provide maximum flexibility for the training of biomedical research scientists. The educational goals are to promote biological literacy by providing core and advanced curricula covering key chemical, biological and genetic principles using molecular, cellular and physiological approaches, and to promote scholarship in biomedical science through mentored, original research.

Students choose their mentor and concentration during the spring semester of their first year. Although students can enter the Interdisciplinary Program in Biomedical Sciences in a completely undifferentiated manner, many students join the program with a very specific research goal in mind. The flexibility of the curriculum accommodates both types of students.

Aging

Our mission is to provide students with advanced training in the field of Aging from a comprehensive perspective (clinical, physiological, epidemiological, sociological, and psychological) so that they may become proficient in providing specialized, quality care to an older population.

Biomedical Informatics

The mission of the program is to train a diverse workforce of professionals, researchers, and leaders, with multidisciplinary training in computer science, health and medicine, biostatistics, data science and analytics, engineering, and research methodology.

(CTS) Clinical and Translational Science

Our mission is to train physicians and scholars to become clinical and translational researchers in the medical sciences. We seek to provide a structured, mentored program that establishes a sound foundation for individuals to conduct multidisciplinary clinical/translational research, and to facilitate the development of successful clinical/translational research careers.

(HOP) Health Outcomes and Policy

Our educational mission is to produce research-oriented professionals who are well trained in health outcomes and policy research, yet broadly educated regarding the needs of the larger health field. In addition to specialized training, we seek to train professionals who are able to function in a range of clinical, health care, academic, and community settings. To achieve this goal, courses are taught by faculty with multi-disciplinary expertise in health outcomes and policy research, social and community epidemiology, prevention science, implementation science, economics, biostatistics, medical sociology, and psychology. Our courses are open to graduate students, medical students, residents, fellows, and faculty participating in the Clinical and Translational Science Institute (CTSI) educational programs with instructor approval. CTSI KL2 and T2 scholars are especially encouraged to take part. In the effort to train future leaders in health outcomes and policy research, educational experiences extend beyond the classroom to include involvement in ongoing research projects and policy analyses.

Medical Sciences

To train bright and enthusiastic students who want to work at the vanguard of science in both traditional and nontraditional settings.

Translational Biotechnology

To train bright and enthusiastic students who want to work in the interface of science and business in either research or management of companies involved in the production and promotion of modern biological products for use in the solution of global human problems.

The College of Medicine

The mission of the UFCOM is to develop excellent physicians, scholars, scientists, physician assistants and professional staff who will contribute to the advancement of medical science and provide compassionate care of the highest quality for patients. We are committed to a diverse and inclusive environment, attracting the best minds to learn, discover, heal and ameliorate human suffering.

To achieve this mission we aspire to the following goals:

1. Recruit a highly competent, empathetic, service-oriented and diverse group of students, scientists, scholars, physicians and professional staff and educate all to become and remain exemplary practitioners and academicians who adhere to the highest professional standards.
2. Aspire to achieve national and international preeminence in scholarly research. Foster discovery and innovation in medical science and health care by developing interdisciplinary teams of basic science and clinical researchers to conduct meaningful investigations that impact the prevention and diagnosis of disease, facilitate improved treatments, and enhance the quality of life for individuals locally, nationally and globally.
3. Treat patients with comprehensive, evidence-based, state-of-the-art and cost-effective methods. Promote health, prevent disease and educate the public.
4. Promote organizational excellence, professional development and advancement.

University of Florida

It is the mission of the University of Florida to offer broad-based, exclusive public education, leading-edge research and service to the citizens of Florida, the nation and the world. The fusion of these three endeavors stimulates a remarkable intellectual vitality and generates a synthesis that promises to be the university's greatest strength.

The university maintains its dedication to excellent teaching and researching by creating a strong and flexible foundation for higher education in the 21st century. The university welcomes the full exploration of our intellectual boundaries and supports our faculty and students in the creation of new knowledge and the pursuit of new ideas.

Teaching is a fundamental purpose of this university at both the undergraduate and graduate levels. Research and scholarship are integral to the education process and to the expansion of our understanding of the natural world, the intellect and the senses. Service reflects the university's obligation to share the benefits of its research and knowledge for

the public good.

Responsible Roles: Associate Professor & Associate Dean, Graduate Education (Rowe, Thomas), Senior Associate Dean for Educational Affairs (Fantone, Joseph)
Program: Medical Sciences (MS)
Progress: Ongoing

PG1: Overall

To provide a graduate program to serve students who seek an advanced degree beyond a B.S. to meet their career goals, but who do not need a Ph.D.-level program.

Evaluation Method

Review results of admissions: GPA and GRE scores; Applied/accepted/matriculation data; Diversity metrics

Responsible Role: Assistant Professor (Carter, Christy), Associate Professor & Associate Dean, Graduate Education (Rowe, Thomas), Professor (Shorr, Ronald)
Progress: Ongoing

PG2: Quality Education and Research

To provide quality classroom instruction and quality research skills in order to graduate individuals who are well-positioned to begin careers in medical and health care disciplines.

Evaluation Method

Aging - Posting and commenting assignment on the benefit of aging and geriatric research in personal or professional life

Biomedical Informatics - Midterm exam; Term paper

CTS - Completion of sound research project and thesis; Graduate reports of career status, grant funding, and publications

HOP - Successful completion of written thesis and oral defense

Medical Sciences - Successful completion of thesis research; Oral presentation of thesis research; Defense of thesis

Translational Biotechnology - Successful completion of internship; Successful completion of thesis research; Oral presentation of thesis research; Defense of thesis

Responsible Role: Assistant Professor (Carter, Christy), Professor (Shorr, Ronald)
Progress: Ongoing

SLO1: Knowledge

Identifies, describes, and explains key concepts, study designs, and research methodologies necessary to conduct research in medical and health care disciplines.

SLO Area (select one): Knowledge (Grad)
Responsible Role: Assistant Professor (Carter, Christy), Professor (Shorr, Ronald)
Progress: Ongoing

Assessment Method

Aging - Literature search; Write a research question related to aging

Biomedical Informatics - Course project; Midterm exam

CTS - Develop, conduct, and analyze sound research projects; Written examinations; Faculty observations; Complete manuscript for publication and presentation

HOP - Oral project presentation; Written research project description

Medical Sciences - Examinations; Discussions during supervisory committee meetings (every 6 months); Final thesis defense

Translational Biotechnology - Examinations in GMS 6506; Discussions during supervisory committee meetings (every 6 months); Final thesis defense

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SLO2: Research

Effectively explains research ideas, designs, and produces a scientifically sound clinical/translational research project in an ethically sound manner, which includes testable hypotheses and specific aims, presenting scientific relevancy, stating appropriate statistical and ethical considerations, detailing subject enrollment, data collection and analysis, and reporting how the project will lead to improvement of human health.

SLO Area (select one): Skills (Grad)
Responsible Role: Assistant Professor (Carter, Christy), Professor (Shorr, Ronald)
Progress: Ongoing

Assessment Method
Aging - Literature review

Biomedical Informatics - Course project; Term project

CTS -Invitations to give oral presentations; Submission/acceptance and publication of research manuscript(s); Mentor faculty assessment of research proposal

HOP - Successful completion of IRB HIPAA for Researchers exam; Successful completion of one external research training course: (A) NIH Extramural Education or (B) CITI Basic IRB Regulations, Informed Consent, and History/Ethical Principles; Written Master's thesis and oral defense

Medical Sciences - Oral presentations; Written feedback; Successful completion of UF-required research training

Translational Biotechnology - Oral presentations; Written feedback; Successful completion of UF-required research training

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SLO3: Professionalism

Organize activities that promote self-improvement, scientific teamwork, and improvement in human health.

SLO Area (select one): Professional Behavior (Grad)
Responsible Role: Assistant Professor (Carter, Christy), Professor (Shorr, Ronald)
Progress: Ongoing

Assessment Method
Aging - Instructor and program director evaluation of discussions and projects submitted

Biomedical Informatics - Supervisory committee evaluation of research presentations,

including written Master's thesis and oral defense

CTS - Mentor and collaborator observations; Adherence to agreed upon timelines for project completion; Establishing and updating an individual development plan

HOP - Supervisory committee evaluation of research presentations, including written Master's thesis and oral defense

Medical Sciences - Oral presentations in GMS 6003; Professionalism checklist

Translational Biotechnology - Oral presentations in GMS 6003; Professionalism checklist

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AAP Detail

Start: 7/1/2017
End: 6/30/2018
Progress: Ongoing
Providing Department: Medical Sciences (MS)
Responsible Roles: Assistant Professor (Carter, Christy), Professor (Shorr, Ronald)

Research (Graduate and Professional AAPs only)
Aging

Students can earn a Master of Science in Medical Sciences with a concentration in Aging and Geriatric Practice entirely online. This unique degree is offered through the Department of Aging and Geriatric Research, and the faculty consists of clinical researchers and doctors at the forefront of geriatric research. This non-thesis master's degree takes a comprehensive look at aging by studying clinical, physiological, epidemiological, sociological, and psychological approaches.

Biomedical Informatics

Students pursuing a Master of Sciences in Medical Sciences with a concentration in Biomedical Informatics focus on developing a theoretical and practical understanding of a wide range of informatics-related topics in biology, healthcare, and public health, and on their applications to improving health-related outcomes through: analyzing problems and producing solutions, creating new paradigms, frameworks and processes to address BMI problems, working effectively and efficiently in a multidisciplanary setting, and disseminating new information and knowledge acquired in the field to experts and non-experts alike.

CTS

Students pursuing this concentration do so for the purpose to conduct clinical/translational research; therefore, those admitted to this degree program must already have a clinical/translational research project outlined and have obtained mentorship appropriate for the area of research. Students are expected to conduct and complete their projects using the competencies gained during their didactic coursework. The research mentors provide hands-on, individualized training during the students program participation.

HOP

Students are expected to produce a master’s thesis that will result in a publishable manuscript. Students are paired with a research mentor before program matriculation so that they receive one-on-one research mentoring from the outset. The core curriculum courses taken during the first semester are designed to provide students with foundational

skills in health outcomes and policy research design and methodologies. In addition, students take advanced methods courses. To provide hand-on experience, course requirements and assessments typically include a combination of critical evaluation of the academic literature, oral presentations, and the development of research protocols. In their last semester, students participate in a capstone research seminar course. Students also take 6 research credits to complete their master's thesis work.

Medical Sciences

Students pursuing a Masters in Medical Science gain a basic understanding of molecular and cell biology, and a produce high-quality research project under the direction of a skilled mentor. Specialization may be in any of the fields of research being pursued in the College of Medicine and includes molecular genetics, gene therapy, bacterial or viral pathogenesis, protein structure, toxicology, mammalian genetics, wound healing, or congenital eye diseases. The research is presented in the form of a thesis which is defended in a public forum.

Translational Biotechnology

The Master in Medical Sciences with a concentration in Translational Biotechnology is a thesis program that is interdisciplinary (biosciences and business), is research intensive, has deep industry involvement, and includes a formal internship at a company. A foundation of the program is a high-quality research project under the direction of a skilled mentor, with supervision by a committee, and focuses on applied and translational research, including: drug/biologics/device product development, manufacturing process development, assay development, toxicology studies, quality systems (quality control and quality assurance), clinical trial support, and regulatory compliance.

Assessment Timeline (Graduate and Professional AAPs only)

Curriculum Map (UG AAPs only)

Assessment Cycle (All AAPs)
The assessment cycles for each of the six concentrations are attached.

Assessment Cycle_All MS Concentrations

Methods and Procedures (UG and Certificate AAPs)

SLO Assessment Rubric (All AAPs)
Rubrics are attached for the following:

Aging - (Aging_Discussions)

Biomedical Informatics - (Biomedical Informatics_Rubric)

CTS - (CTS_Rubric)

HOP - (HOP_Rubric)

Medical Sciences - (MS_Rubric)

Translational Biotechnology - (TB_Rubric)

- Aging_Discussions
- Biomedical Informatics_Rubric
- CTS_Rubric
- HOP_Rubric
- MS_Rubric
- TB_Rubric

Measurement Tools (Graduate and Professional AAPs Only)
Aging - Formative assessments will occur weekly in the form of discussions, papers and/or quizzes. Summative assessments will occur several times (no less than 3) during the semester in the form of a project. Discussions are graded via a rubric.

Biomedical Informatics - A range of assessment tools are used to evaluate achievement of the SLOs. The Education Committee will assess research protocols for each student using a common rubric. This allows for consistent assessment by the same group of faculty of achievement of SLOs across the students. For knowledge, the Education Committee will assess one research protocol. In addition, the professional behavior will be measured by successful completion of the IRB-01 training and one external human subjects training.

CTS - Students are assessed through a variety of assessments: written/oral examinations, passing scores on annual HIPAA training modules, peer feedback of presentation and writing skills, faculty assessment of presentations, interdisciplinary teamwork and writing skills, and faculty observations and interactions.

HOP - A range of assessment tools are used to evaluate achievement of the SLOs. The Education Committee will assess research protocols for each student using a common rubric. This allows for consistent assessment by the same group of faculty of achievement of SLOs across the students. For knowledge, the Education Committee will assess one research protocol. In addition, the professional behavior will be measured by successful completion of the IRB-01 training and one external human subjects training.

Medical Sciences - Knowledge is assessed through examinations, observations of students in all environments, and via the student's oral defense of their final thesis. Skills are evaluated through oral/written evaluations. Additionally, professionalism is assessed during oral presentations and by a checklist. Students receive copies of all forms and any written feedback provided by faculty.

Translational Biotechnology - Knowledge is assessed through examinations, observations of students in all environments, and via the student's oral defense of their final thesis. Skills are evaluated through oral/written evaluations. Additionally, professionalism is assessed during oral presentations and by a checklist. Students receive copies of all forms and any written feedback provided by faculty.

Assessment Oversight (All AAPs)
Aging

Name	Department Affiliation	Email Address	Phone Number
Christy Carter, M.D.	Aging and Geriatric Research	cartercs@ufl.edu	352-273-5727

Biomedical Informatics

Name	Department Affiliation	Email Address	Phone Number
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Francois Modave, Ph.D.	HOP	modavefp@ufl.edu	352-294-5984

CTS

Name	Department Affiliation	Email Address	Phone Number
Ronald Shorr, M.D., M.S.	Epidemiology	rshorr@ufl.edu	352-374-6077
Maria Gavidia	CTSI	mgavidia@ufl.edu	352-294-8340

HOP

Name	Department Affiliation	Email Address	Phone Number
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Medical Science

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Translational Biotechnology

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Academic Assessment Plan Entry Complete: ☑