The University of Georgia

University Council
Athens, Georgia 30602

April 21, 2017

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Dear Colleagues:

The attached proposal from the Franklin College of Arts and Sciences to offer the existing major in Genetics (M.S.) with a Non-Thesis option will be an agenda item for the April 28, 2017, Full University Curriculum Committee meeting.

Sincerely,

Alison Alexander

Alison F. Alexander, Chair
University Curriculum Committee

cc: Provost Pamela S. Whitten
Dr. Rahul Shrivastav

Proposal to Add a Non-Thesis Option to the M.S. in Genetics
Franklin College of Arts and Sciences
Department of Genetics

Submitted to: Dean Suzanne Barbour, Ph.D.
Graduate School
University of Georgia

Submitted by: Allen Moore, Ph.D., Distinguished Research Professor and Head
Department of Genetics
University of Georgia

Basic Information

Proposed Change: Non-thesis option for students pursuing a non-research, professionally oriented track.

Start date: Fall 2017

Program Description

The Department of Genetics requests that a non-thesis option be added as an option for the M.S. in Genetics. The Department has long focused on training Ph.D. students who are prepared to direct research in academic or professional settings. Our current M.S. program is very limited: students earning an M.S. usually pursue a Ph.D. either at the University of Georgia or elsewhere, eventually entering a career directing research. However, as the field of genetics takes on broader importance in clinical and other professional settings, we recognize that there are expanding opportunities for students with the additional training possible with an M.S. degree that does not require completing research and a thesis. We anticipate that a non-thesis option for the M.S. will expand opportunities for students who wish to enter such a clinical or professional career.

The proposed non-thesis M.S. contains all the courses already required of thesis-track M.S. students. Students on both tracks are required to take courses that introduce them to research in the field of genetics (GENE 8000 and GENE 8100), and train them in research communication (GENE 8880) and the responsible conduct of research (GRSC 8550). Despite not conducting research, non-thesis M.S. students will likely pursue careers where such skills are required. All students are required to take a fundamental 8000-level graduate course in an area of specialization in the department. Thesis M.S. students take 6 hours of directed research and 3 hours of thesis, as well as electives, for a total of 30 credits. Thesis M.S. students are supervised by a thesis advisory committee, consisting of a major faculty adviser and 2 additional faculty. Thesis M.S. students must pass an oral defense of the thesis to graduate.

Non-thesis M.S. students would replace the research hours with elective credits at the 6000 – 8000 level for a total of 30 credits. Thus, the number of total credit hours for both tracks is identical.

Non-thesis students would be advised in assembling a coherent program of study, with some area of concentration, by a faculty advisory committee of two faculty. In lieu of a thesis, the student must pass a comprehensive written examination (a grade of S in a 1-credit examination course, to be proposed in CAPA) based on the material covered in an area of concentration. The examination will be administered by the student's advisory committee during the final semester of the student's program, and the chair will assign a S/U grade with input from the committee. Should the student not obtain a satisfactory grade, he/she will have one more opportunity to achieve a satisfactory grade on the exam, but he/she will have to enroll to take the exam the following semester. Any student failing to achieve a satisfactory grade on the exam twice will not graduate with a non-thesis M.S.

Table 1. Requirements for the M.S. in Genetics With and Without a Thesis

Current M.S. with Thesis			**Proposed M.S. Non-Thesis**	
Core (9 credits)			**Core: (9 credits)**	
GENE 8000: Introduction to Research in Genetics	2		GENE 8000: Introduction to Research in Genetics	2
GENE 8100: Foundations of Genetics Analysis	4		GENE 8100: Foundations of Genetics Analysis	4
GRSC 8550: Responsible Conduct of Research	1		GRSC 8550: Responsible Conduct of Research	1
GENE 8880: Directed Study in Research Communication	2		GENE 8880: Directed Study in Research Communication	2
Specialty (3 credits):			**Specialty (3 credits):**	
GENE 8920: Nucleic Acids or GENE 8150: Fundamentals of Evolutionary Genetics	3		GENE 8920: Nucleic Acids or GENE 8150: Fundamentals of Evolutionary Genetics	3
Electives (9 credits)			**Electives (17 credits)**	
Any courses at the 6000 – 8000 level	9		Any courses at the 6000 – 8000 level	17
Research and Thesis (9 credits)				
GENE 7000: Master's Research	6			
GENE 7300: Master's Thesis	3			
Oral Defense of M.S. Thesis			GENE 7XXX: M.S. Written Exam	1
Minimum Total Credit Hours	**30**		**Minimum Total Credit Hours**	**30**

At the time of application, the student must choose via Admissions either to pursue the non-thesis or thesis M.S. option. If a student is currently enrolled, a degree objective change is required.

Faculty Vote

The Graduate Faculty in Genetics voted to approve this proposal with the votes being: 23 (in favor), 0 (opposed), and 0 abstentions.

Justification for the Proposed Non-Thesis Option

1. *Increased career opportunities.* The Department has long focused on training students who are prepared to direct research in academic or professional settings. However, the field of genetics has taken on much broader importance in clinical and other professional settings. For example, personal genomics has become well established in oncology and will likely be widely available in clinical settings soon. The broad application of genetic technologies will likely spur the need for workers with advanced skills in this field. The Department recognizes the growing importance of these opportunities and believes there is unmet demand for the kind of training that will prepare our students to pursue these new career paths. Although we recognize the importance of training students to do research, we recognize that there are many more career paths now, or soon to be, available to students with advanced knowledge of genetics that can be obtained through graduate-level coursework.

2. *Increased pay in technical careers.* One traditional career path for genetics students is work as a technician in the biomedical and pharmaceutical industries. A non-thesis MS may or may not guarantee a job as a technician in the biotech industry, but having a non-thesis M.S. will result in higher starting salaries for students who obtain those jobs.

3. *Increased opportunities for further graduate study.* Many of our undergraduates wish to pursue careers as physicians, but recognize only late in their programs of study that they wish to pursue further graduate study in a variety of fields. One year of additional coursework at the graduate level will make those students better prepared to bridge to an additional graduate degree.

4. *Additional option for current graduate students.* Most graduate students enter the Department of Genetics hoping to earn a Ph.D. Some students discover that this is not the appropriate career path; those students typically leave the program before completing a research project that could form the basis for an M.S. thesis. However, those students have often successfully completed sufficient coursework to have earned a non-thesis degree, but we have no such option for them.

Admission Procedure for Applicants

Currently, students do not usually directly apply to the M.S. program because all our students are admitted through the Integrated Life Sciences (ILS) portal using the normal application procedures as defined by the Graduate School. However, the Department of Genetics can admit students who apply directly to the department. Those students also apply through the normal application procedures as defined by the Graduate School. Those applications are reviewed by the faculty of the Department of Genetics' Graduate Affairs Committee, chaired by

the Graduate Coordinator. We anticipate that most non-thesis M.S. students will directly apply to the Department, while thesis M.S. students will continue to apply though the ILS portal. The admissions standards will be the same for students applying for either the thesis or non-thesis options.

Impact on Current Students

We do not anticipate any adverse impact on current M.S. students. The positive impact will be to give our existing students another option for graduation with a degree in Genetics. Students currently enrolled in the M.S. or Ph.D. program will be given the option of changing to a non-thesis M.S. (and completing those requirements) or continuing with the current degree objective. We do not anticipate that many of our current students will switch to a non-thesis option.

Financial Impact

No new faculty, facilities, or services will be required to implement a non-thesis option for the M.S. degree. Thus, no new funds are required.

Assessment

The Department currently has a robust assessment plan for our graduate program. We will make necessary adjustments for the non-thesis M.S. track so that this program can be properly assessed.

Approvals on File

Proposal: Offer the Existing Major in Genetics (M.S.) with a Non-Thesis Option

Department: Genetics

College: Franklin College of Arts and Sciences

Proposed Effective Term: Fall 2017

Department:

- Genetics Department Head, Dr. Allen Moore, 4/18/2017

School/College:

- Franklin College of Arts and Sciences Associate Dean, Dr. Jean Martin-Williams, 3/24/2017

Graduate School:

- Graduate School Dean, Dr. Suzanne Barbour, 4/19/2017