



University Council

February 14, 2020

UNIVERSITY CURRICULUM COMMITTEE – 2019-2020

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Dear Colleagues:

The attached proposal from the College of Veterinary Medicine to offer the existing major in Comparative Biomedical Sciences (M.S. Non-Thesis) online will be an agenda item for the February 21, 2020, Full University Curriculum Committee meeting

Sincerely,

John Maerz, Chair

University Curriculum Committee

cc: Provost S. Jack Hu
Dr. Rahul Shrivastav

**Proposal for an External Degree
The University of Georgia**

Institution: University of Georgia

Date: October 3 2019

College/School/Division: College of Veterinary Medicine

Department: College of Veterinary Medicine

Program: Comparative Biomedical Sciences (M.S. Non-Thesis)

CIP Code: 26140101

Proposed Start Date: Summer 2020

1. Needs Assessment

The College of Veterinary Medicine at the University of Georgia currently offers a face-to-face Master of Science in Comparative Biomedical Sciences (M.S. in CBS) with a non-thesis option. This degree program is designed to emphasize interdisciplinary approaches to biomedical research. Graduates of this one- to two-year program understand the basic scientific principles related to veterinary and biomedical sciences, including physiology, toxicology, pharmacology, pathology, immunology, virology, bacteriology, parasitology, epidemiology, anatomy, and behavior. The program is geared towards preparing post-baccalaureate students for professional school (D.V.M., M.D., DDS.) or careers that involve science but are not bench or field research-based.

In July 2018, UGA commissioned Hanover Associates to conduct a feasibility study regarding the offering of Comparative Biomedical Sciences (M.S. Non-Thesis) online to attract an expanded market of students to this competitive preparatory master's degree in health sciences. The study concluded that such a program would be viable if structured appropriately. Key findings from the report are excerpted below,

- ***Student demand for preparatory health sciences programs is growing quickly.*** Master's conferrals in preparatory health sciences programs grew at an annualized rate of 8.3 percent nationally and 7.2 percent in the Southeast between 2012 and 2016. Programs in the related field of biomedical science experienced even stronger growth in that period. In contrast, all master's degree programs grew at a rate of about 1.0 percent per year.
- ***Although there are a considerable number of preparatory health sciences programs nationwide, very few are offered online.*** In the Southeast, Hanover identified just two likely online competitors to UGA's proposed program (Liberty University and University of South Florida). In addition, there are two campus-based programs in Georgia, located in Macon (Mercer University) and Atlanta (Morehouse School of Medicine). Across the Southeast, there are at least 13 more programs hoping to attract a similar student body.
- ***Employment projections indicate high demand for health professionals across the United States and in Georgia.*** While the proposed program does not directly train students for entry into these professions, demand for healthcare providers will likely contribute to student interest in a preparatory master's. In addition, employment for medical researchers in Georgia is expected to grow by 17.2 percent between 2014 and 2024, outpacing overall employment growth in the state in this period (11.2 percent).
- ***Recommendation for Program Launch: UGA should position the program as preparing students to enter professional medical schools or medical research.*** Several competing programs claim to prepare students for careers in medical science/research as well as entry into professional school. This component enables these programs to attract a more diverse audience.

While relatively few comparable degree programs offer distance delivery options, the average number of annual completions of master's programs in health/medical preparatory and biomedical sciences in the Southeast Region is 87. Nationally, there are nearly 100 similar degree programs offered, but they are largely in the Northeast or on the West Coast, with only 17 offered in the Southeast, and only two of those offered online. These data suggest that there is room in the market for an expanded UGA program offered online, with the potential for robust enrollments, not limited to students from Georgia or the Southeast.

2. Admission Requirements

Requirements for admission to the fully online Comparative Biomedical Sciences (M.S. Non-Thesis) will be the same as for the current campus-based degree. Eligible applicants will have earned a bachelor's or other professional degree in a non-health related field. The admissions requirements include:

- Completion of online Graduate School application
- Completion of online CBS application
- One official copy of transcripts from all institutions—minimum undergraduate (and prior graduate) GPA of 3.5
- Three letters of recommendation
- For international applicants, official TOEFL or IELTS scores
- Current resume
- The completion of a personal narrative describing the applicant's career goals in the health professions.

Admissions are competitive, thus meeting the minimum requirements may not ensure admission. All completed files are evaluated by program faculty that consist of seven tenure-track and one clinical-track faculty. Applications are evaluated holistically, and recommendations for admissions are based on a composite of the above-mentioned admission requirements.

3. Program Content

The curriculum of the program will be equivalent to the existing face-to-face non-thesis Comparative Biomedical Sciences program. The non-thesis degree is intended for students pursuing non-research, professionally-oriented programs of study and is consistent with the college's long-term goal of enhancing and broadening the Comparative Biomedical Sciences degree. The program of study is interdisciplinary and designed as a broad foundation for students who intend to pursue professional careers, such as veterinarians, physicians, biomedical engineers, and biomedical or diagnostic technicians, and who require knowledge of animal physiology and immunology, microbiology, and biomedical and diagnostic techniques for industry or governmental labs.

Students must complete at least 30 credit hours selected from the courses below. A possible framework of suggested courses for each semester is listed. Most students will complete 30 credit hours in a single year (typically 6 hours in the summer, 12 hours in the fall, and 12 hours in the spring). Preparatory health sciences master's degrees are usually taken in a "gap year" between undergraduate study and professional school, and we anticipate most students will pursue the program full time. Thus, the initial program design anticipates cohorts of students beginning in summer and completing the program in one year.

Once the program is established (and revenue streams stabilize after the start-up period), we anticipate offering multiple sections of the three-course Foundations sequence each semester, as well as more choices of electives, to offer flexibility in start dates for students and to allow for part-time students who may wish to pursue the degree while working full time in preparation for a career change.

In addition to the course work, the students will be provided extra help in terms of selecting the professional schools to apply for based on their GPA and standardized test scores. They will also be encouraged to engage in volunteer activities in local organizations that will help to bolster their applications. Students will work with the program director and coordinator to develop strong personal

statements, work, and activities, as well as write short essays for specific questions that they can use to fill out their secondary applications. They will be coached for their interviews. Students who live closer to Athens will work with the career counseling office at UGA and attend mock interview sessions. Students who are at distant locations will attend mock interview sessions online conducted by program faculty. They will submit their applications to professional schools upon graduation from the online program.

Table 1: List of courses offered in the online program:

Course ID	Course Title	Credit Hours
VBDI 6010E	Fundamental Cell Biology	3
VBDI 6020E	Comparative Pre-veterinary Anatomy	3
VBDI 6030E	Basic Human Anatomy for the Health Sciences	3
VBDI 6040E	Pre-Veterinary/Pre-Medical Histology	3
LAMS 6000E NEW	Foundations of Clinical Medicine I	3
VBDI 6050E	Neuroscience for the Health Professions	3
VBDI 699813	Principles of Endocrine Physiology and Pharmacology	3
VBDI 7010E	Fundamental Immunology for the Health Professions	3
VBDI 7020E	Fundamental Pharmacology for the Health Professions	3
LAMS 6010E - NEW	Foundations of Clinical Medicine II	3
VBDI 7030E	Laboratory Animals in Research	3
VBDI 7040E	Problems in Biosciences	3
VBDI 7050B	Problems in Anatomy	3
VBDI 7060E	Online Research Communication	3
LAMS 6020E -NEW	Foundations of Clinical Medicine III	3

Table 2: Sample program of study

Semester	Course ID	Course Title	Credit Hours
Summer	VBDI 6010E	Fundamental Cell Biology	3
	LAMS 6000E	Foundations of Clinical Medicine I	3
Fall	VBDI 6030E	Basic Human Anatomy for the Health Sciences	3
	VBDI 6050E	Neuroscience for the Health Professions	3
	VBDI 6040E	Pre-Veterinary/Pre-Medical Histology	3
	LAMS 6010E	Foundations of Clinical Medicine II	3

Spring	VBDI 6998E	Principles of Endocrine Physiology and Pharmacology	3
	VBDI 7010E	Fundamental Immunology for the Health Professions	3
	VBDI 7020E	Fundamental Pharmacology for the Health Professions	3
	LAMS 6020E	Foundations of Clinical Medicine III	3
		Total	30

4. Student Support Services

Students will be advised by a program coordinator dedicated to the Online Comparative Biomedical Sciences program. The program coordinator will assist with recruiting in partnership with the Office of Online Learning, facilitate admissions tracking and enrollment in partnership with the Graduate School and the CVM, consult and develop individual programs of study for each student in the program, and coordinate campus-wide resources to support students with career advice, resume development, and support for pre-health applications. Students, especially those who have completed non-biology majors and those attempting a career change, will be given special support to encourage successful entry into health-related professions.

5. Resident Requirements

There is no residency requirement beyond the minimum required by the UGA Graduate School for M.S. degrees, which is two semesters of enrollment, not necessarily consecutive.

6. Program Management

Maintenance of the quality and viability of the program will be the responsibility of the faculty director, with the guidance and support of the office of the Associate Dean for Research and Graduate Affairs, which is responsible for the face-to-face Comparative Biomedical Sciences program. All courses will be taught by tenured, clinical-track or tenure-track faculty of the College of Veterinary Medicine or (as the program expands and additional course offerings are added each semester) by appropriately highly qualified part-time faculty, vetted and formally approved by the CVM faculty. All courses will have teaching assistants (TAs) assigned to help with instructional needs and individual student contact; these TAs will be D.V.M. graduates who have returned to CVM to pursue a Ph.D. The program will support TAs who will in turn work with program faculty to complete the research requirements for their Ph.Ds. The College of Veterinary Medicine's Educational Resource Center will assist with online material development and illustrations.

The faculty director will supervise a program coordinator who will manage day-to-day administrative tasks associated with the program as well as advise students as noted above. Program faculty will play an important role in the admissions process and in training the students.

Plan for application and matriculation of students:

Application and matriculation of students will follow existing procedures for face-to-face programs.

Program review and assessment:

The program director will work with the Office of Student Affairs at CVM (educational assessment) to obtain metrics of student performance in each of the individual courses and their performance in the program overall. The program coordinator will maintain a list of graduating students who have been admitted to various professional schools.

Duplication with other programs in the immediate area:

As indicated in the Hanover research report, there are 17 biomedical preparatory master's programs in the Southeast, only two of which are online. Face-to-face programs in Georgia include Mercer University and Morehouse School of Medicine, and the two online programs are offered at Liberty University, a private, religiously-affiliated university in Virginia, and the University of South Florida, a public research university in Tampa, Florida.

7. Library and Laboratory Resources

There are no laboratory requirements for the program. In terms of library access, students will have access to Galileo and GIL, as well as a multitude of interactive, internet-based resources which have been incorporated into the web-based curriculum and resources provided to all CVM students.

The College of Veterinary Medicine has been a leader in the development of simulations/animations, virtual slides, and other resources which are a hallmark of state-of-the-art veterinary education. Student access to these tools is a feature of this online program; the online Comparative Biomedical Sciences (M.S. Non-Thesis) will accelerate the development of more such tools that will benefit all CVM students in face-to-face as well as online courses.

8. Budget

Projected Revenue:

Enrollment projections for the first four years are 20, 25, 30, and 35 students. Using the standard 2019-2020 graduate tuition rate of \$370/credit hour plus the \$275 e-Rate, for a total of \$645/credit hour, the projected revenue is as follows:

Year One: 20 students x \$645 x 30 credits = \$387,000
 Year Two: 25 students x \$645 x 30 credits = \$483,750
 Year Three: 30 students x \$645 x 30 credits = \$580,500
 Year Four: 35 students x \$645 x 30 credits = \$677,250

Projected Costs:

	Year One	Year Two	Year Three	Year Four
Marketing	\$5,000	\$5,000	\$5,000	\$5,150
Faculty	\$5,000	\$45,000	\$47,740	\$49,170
Program Director	\$52,668	\$54,248	\$55,875	\$57,551
Program Coordinator	\$0	\$0	\$79,500	\$81,885
Student Support	\$0	\$10,000	\$10,000	\$10,300
Other	\$4,000	\$30,000	\$30,000	\$30,900
Total	\$66,668	\$144,248	\$228,115	\$234,956

Total Revenue – Costs:

	Year One	Year Two	Year Three	Year Four
Revenue	\$387,000	\$483,750	\$580,500	\$677,250
Costs	\$66,668	\$144,248	\$228,115	\$234,956
Total	\$320,332	\$339,502	\$352,385	\$442,294

9. Program Costs Assessed to Students

This program is proposing to charge an e-rate of \$275 per credit hour. This is consistent with the rates charged by online programs at the University of Georgia. There are no other costs beyond those normally associated with the program.

Approvals on File

Proposal: Offer the Existing Major in Comparative Biomedical Sciences (M.S. Non-Thesis) Online

College: College of Veterinary Medicine

Department: College of Veterinary Medicine

Proposed Effective Term: Summer 2020

Department:

- Veterinary Biosciences and Diagnostic Imaging Department Head, Dr. Steven Holladay, 10/3/19

School/College:

- College of Veterinary Medicine Associate Dean, Dr. Sharron Quisenberry, 10/3/19
- College of Veterinary Medicine Dean, Dr. Lisa Nolan

Graduate School:

- Graduate School Interim Dean, Dr. Ron Walcott, 9/23/19