

From: [Smith, Randy](#)
To: [Parvin, Jeffrey](#)
Cc: [Leite, Fabio](#); [Reed, Katie](#); [Smith, Randy](#); [Clinchot, Dan](#); [Bradford, Carol](#); [Miriti, Maria](#); [Hunt, Ryan](#); [Duffy, Lisa](#)
Subject: MS Option - Biomedical Sciences Graduate Program
Date: Thursday, March 7, 2024 3:29:49 PM
Attachments: [image001.png](#)

Jeff,

The proposal from the Biomedical Sciences Graduate Program to add a Master's of Science option to the Program, details specified in the proposal, was approved by the Council on Academic Affairs at its meeting on March 6, 2024. Thank you for attending the meeting to respond to questions/comments.

No additional level of internal review/approval is necessary. This action will be included in the Council's next [Annual Activities Report](#) to the University Senate (July 2024).

The Office of the University Registrar will work with you on any implementation issues.

Please keep a copy of this message for your file on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions please contact the Chair of the Council, Professor Fábio Leite (.11), or me.

Randy



W. Randy Smith, Ph.D.

Vice Provost for Academic Programs

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TO: Randy Smith, Vice Provost for Academic Programs

FROM: Graduate School Curriculum Services

DATE: 12/07/2023
(Re-sent (?) 2/13/2024)

RE: Proposal to Revise Master of Science Biomedical Sciences Program in College of Medicine

The Biomedical Sciences Graduate Program in the College of Medicine is proposing a Master of Science Program Revision.

The proposal was received by the Graduate School on 7/21/2023. The combined GS/CAA subcommittee first reviewed the proposal on 11/30/2023 and requested revisions. Revisions were received on 12/6/2023. The proposal is supported for elevation to CAA.



THE OHIO STATE UNIVERSITY

COLLEGE OF MEDICINE

Biomedical Sciences Graduate Program
1178 Graves Hall, 333 West 10th Avenue
Columbus, Ohio 43210-1239

December 6, 2023

Graduate School
247 University Hall
230 North Oval Mall
Campus

Dear Graduate School,

On November 29, 2023, we received feedback on our proposal to add a Master's of Science (MS) option to the Biomedical Sciences Graduate Program. The edits requested include addressing whether students who do not pass the Candidacy Exam will be eligible for the MS option, and whether we would allow any student to receive the MS degree while performing satisfactorily in the PhD program. We have addressed these edits on page 3 of this document (page 1 of the proposal narrative), under the section titled, "Summary of updates to the MS in Biomedical Sciences degree program."

Thank you for your consideration.

Sincerely,

Jeffrey Parvin, M.D., Ph.D.
Associate Dean for Graduate Studies
Professor and Co-Director,
Biomedical Sciences Graduate Program



THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE

The Biomedical Sciences Graduate Program

M.S. in Biomedical Sciences

Update to Program Plan

July 17, 2023

Updated December 5, 2023

Summary of updates to the M.S. in Biomedical Sciences degree program

The M.S. degree in Biomedical Sciences was approved in 2012 as an addition to the existing Ph.D. program. This M.S. was approved for post-candidacy students who were unsuccessful in the completion of their doctoral studies. In this update, we propose to add:

1. an option for an M.S. on the basis of a completed candidacy examination (Graduate School Handbook 6.18);
2. make the M.S. available to pre-candidacy students who have completed the coursework and are in good academic standing; and
3. add a non-thesis option that includes a written and oral component.

There is no new curriculum for the M.S. degree, and no students will be admitted into the program via Graduate School Admissions. This program is to enable predoctoral students who fail to advance their independent research a mechanism to exit the program with a terminal M.S. degree. The M.S. degree is not available to students who are making good progress toward their PhD. If students fail the Candidacy Exam, they will be eligible for the non-thesis Master's degree if the student chooses not to re-take the Candidacy Exam.

Description of curriculum

There is no change in the proposed curriculum; there are now two tracks in the BSGP Ph.D. curriculum, and students for this M.S. program can come from either track.

Umbrella Track courses:

1. Year 1 Summer
 - a. BSGP-8050 Research Techniques and Resources
 - b. BSGP-7060 Meet the Faculty
2. Year 1 Autumn
 - a. BSGP 7000 Biomedical Sciences Survey
3. Year 1 Spring
 - a. BSGP-7040 Research Problem Solving in Biomedical Sciences
 - b. BIOPHRM 7510 Professional and Ethical Issues in Biomedical Sciences
4. Year 2 Summer
 - a. BMI-5750 Methods in Biomedical Informatics and Data Science
5. Year 2 Autumn
 - a. BSGP-7070 Fundamentals of Grant Writing
6. Electives are offered in all semesters.

Biomedical Informatics Track

1. BMI-5750 Methods in Biomedical Informatics and Data Sciences
2. BSGP-7000 Biomedical Sciences Survey
3. BMI-5710 Introduction to Biomedical Informatics
4. BIOPHRM 7510 Professional and Ethical Issues in Biomedical Sciences
5. BMI-5730 Introduction to Bioinformatics OR BMI-5740 Introduction to Research Informatics
6. BMI-7235 Applications of Machine Learning and Artificial Intelligence in Biomedical Informatics
7. BSGP-7070 Fundamentals of Grant Writing
8. STAT-6860 Foundation of the Linear Model
9. STAT-6570 Applied Bayesian Analysis
10. Electives are offered in all semesters.

The above courses are generally taken by predoctoral students in the first two years prior to candidacy, and students switching to the M.S. in Biomedical Sciences will have completed these required courses.

Proposed changes to the M.S. in Biomedical Sciences.

1. We propose to add the option of electing to take a terminal M.S. on the basis of a completed candidacy exam.
 - a. As described in the OSU Graduate School Handbook (6.18)
2. We propose to make the M.S. available to pre-candidacy students who have completed the courses required in the first two years of the Ph.D. curriculum and who are in good academic standing.
3. We propose adding a Non-Thesis option. Completion of the Non-Thesis M.S. is based on an exam similar in format to the candidacy exam. The examination committee must include the mentor plus two other faculty members with M- or P-status in BSGP.
 - a. There will be a written component in the same format as used for the candidacy examination.
 - b. There will be an oral component of the examination for which there is a presentation of no more than 30 minutes that is public or private, followed by a closed door question and answer session. The total time for both parts of the oral component must be less than two hours.
 - c. All committee members must grade the examination as Satisfactory.
 - d. Video conferencing is permissible for the oral component of the exam.
4. Other requirements of the M.S. are unchanged
 - a. Requirement for 50 credits
 - b. A thesis option is available.

Administrative arrangements for the proposed program

This M.S. degree program will continue to be administered by the existing administration for the Biomedical Sciences Graduate Program. Since the M.S. degree program will not increase the number of students, no new staff or organization will be required.

Need for update of the M.S. degree program

In the eleven years since the M.S. degree in Biomedical Sciences was established, we have identified students who are pre-candidacy for whom this M.S. would be appropriate. As the established M.S. program is designed for post-candidacy students, we propose extending it to pre-candidacy students.

Prospective enrollment

No students enroll in this M.S. degree program, but rather they shift from the Ph.D. program in Biomedical Sciences to the M.S. degree. Students must be recommended for the M.S. by their advisor; there is no mechanism whereby students initiate the switch to the M.S. program. We anticipate one or two students per year will take the M.S. option.

Special efforts to enroll and retain underrepresented groups in the discipline

The Biomedical Sciences Graduate Program continues to make efforts to recruit underrepresented minorities to the Ph.D. program. There will be no recruitment into the M.S. degree program. The program directors attend national STEM conferences for the recruitment of underrepresented minorities to attend graduate school (SACNAS and ABRCMS) and participate in several OSU initiatives to recruit underrepresented students. For the retention of students, we identify tutors that help students with coursework as needed.

Availability and adequacy of the faculty and facilities available for the degree program.

There is no change to the needs for faculty and facilities, and there will be no increase in the need for facilities.

Need for additional facilities and staff.

There will be no increase in the needed facilities or staff.

Projected additional costs associated with the program

There will be no increase in costs with the M.S. degree program.

Proposed changes to BSGP Handbook

Insert a new section 14 (and renumber subsequent sections)

14. M.S. in Biomedical Sciences

Students who do not make progress in their mentored research projects can transition from the PhD program to take a terminal degree in the MS in Biomedical Sciences. The requirements for this degree are:

1. Completion of 50 credits of course work
2. Students must have a GPA of 3.0 or higher.
3. Students must be currently enrolled for 3 or more credits per term.
4. The student must be recommended for the M.S. degree by their advisor/mentor and approved by the directors of the BSGP.
5. Students may not enter the BSGP with the intent of obtaining a M.S. degree.

14.1. Thesis option

Students who are post-candidacy may prepare a written thesis describing their research accomplishments and present an oral seminar that may be public or private and should be 30 minutes or less. The committee must include the student's mentor plus two other faculty members, all with M- or P-status in BSGP. The committee may ask questions of the candidate in a closed-door session, and the total time for the exam must be less than two hours. Video conferencing of the presentation and closed-door question and answer session is allowable. All committee members must approve the thesis, and the thesis must be formatted according to University directions and be deposited.

14.2. M.S. based on completed candidacy exam

The student may opt to take a Master in Science degree based on having successfully passed the candidacy examination. Students taking this option must be registered for three credits or more per term and must be within the time limit for eligibility of candidacy. These students must not already hold an M.S. degree in Biomedical Sciences. Requirements for this option are consistent with the OSU Graduate School Handbook section 6.18.

14.3. Non-Thesis option

Students who are pre-candidacy may qualify for an M.S. degree if they take a Master's examination. This examination is similar in format to the candidacy examination. The committee must include the mentor plus two other faculty members with M- or P-status in BSGP. The written component of the exam includes an Abstract, Specific Aims (1 page), Research Approach (6 pages), and Literature Cited (no page limit). The student should include in this document relevant experiments that have been completed. The written component of the exam must be submitted to the committee members at least two weeks prior to the date of the oral component of the examination.

The oral component of the examination includes a presentation that cannot exceed 30 minutes and may be available to the public if the student wishes. The committee may then question the student in a private session, and the total time of the oral component cannot exceed 2 hours. Video conferencing is permissible for the oral component of this examination. All committee members must grade the presentation as Satisfactory.

