

Biotechnological & Integrative Opportunities in Microbiome Sciences (BIOMS) Predoctoral Training Grant

Applications Due July 11th

The Biotechnological & Integrative Opportunities in Microbiome Sciences (BIOMS) Training Program is an NIH-funded predoctoral training program dedicated to training graduate students in the microbiome sciences and its biotechnological underpinnings. BIOMS is designed to equip students with the skills and knowledge needed to advance microbiome biotechnology, research, and education through a One Health lens. BIOMS will cultivate an understanding of fundamental concepts in microbiome sciences through requirements spanning coursework, monthly workshops, weekly seminars, and professional development experiences including a biotech internship, mentorship from industry scientists, and workshops focused on science communication.

Curriculum and Required Activities

Fellows must satisfy the degree requirements for their major Ph.D. program and complete the course requirements of the Dual Title PhD in Microbiome Sciences. It is expected that fellows will enroll in the Dual Title Degree and that their major Ph.D. program will work towards joining the Dual Title Degree program if they are not already a part of it. Priority will be given to students who have completed their qualifying exam, though strong candidates who have not yet passed the exam will be considered, with the expectation that they will complete it within six months of submitting this application.

Required BIOMS Core Courses:

- MICRB 416: Microbial Biotechnology (3 credits)
- Responsible conduct of research course (2 credits: MCIBS 591 or a major program RCR course)
- A genomics or microbiome analysis focused course (2-3 credits: BMMB 852, BIOL 439, or PPEM 440)
- MBIOM 550: Current Issues in Microbiome Sciences (2 x 1 credit)
- *New course*: Microbiome Sciences from Origins to Biotechnological Applications (in development for 2026)

Program activities include BIOMS Summer Jumpstart Program (a three-week onboarding experience to equalize technical skills, build cohort connections, and introduce Fellows to faculty labs across campuses), OHMC Weekly Seminar (MBIOM 550), Microbiome Journal Club, Annual Fellow-Faculty Retreat, Mindfulness and Stress Reduction Training, “Beyond the Lab” Workshops (professional development sessions covering biotech industry insights, entrepreneurship, regulation, patents, and science communication), among others.

Application Instructions

Students completing the first year of their PhD are encouraged to apply; applications from first and rising third year PhD students will also be considered. For 2025/26, funding slots are available to students in Anthropology, Biomedical Sciences, Biology, Ecology, Entomology, Food Science, Plant Biology, and Plant Pathology. Students who have completed the first year of their PhD and are enrolled in the Microbiome Science Dual Title Degree Program are also eligible to apply. Future BIOMS T32 funding is contingent upon satisfactory progress and NIH funding. Both domestic and international students are encouraged to apply. Applicants with a background in a biological discipline and/or computer science, indicated by receiving a

bachelor's degree and/or significant work experience in one of these areas are encouraged to apply.

Students should submit the following documents in a single, compiled pdf:

- 1) A one-page personal statement describing their professional goals and motivations and why they are interested in the BIOMS program,
- 2) A one-page research statement in which both the microbiome sciences and biotechnology must be addressed,
- 3) A full-length CV,
- 4) Full length, 1st authored creative works that represents their strengths and abilities (this can include published papers, research presentation slide decks, a previous class writing assignment, digital designs, projects from previous work experiences, etc.), and
- 5) Two letters of support, one being from their current faculty advisor.

Advisor's letter of support should be submitted by the same deadline and should include:

- Statement that advisor supports all required coursework and training program activities,
- Statement that the mentor is willing to contribute to teaching training program workshops, participate in training activities, and attend the annual Fellow-Faculty retreat,
- Statement of how the students' research project will be supported.

The BIOMS advisory committee will review candidates holistically and consider breadth of experiences and strengths, personal attributes, and the trainee's potential to strongly benefit from the program. Top candidates will be interviewed by the program directors and final selections will be invited to join the program, which will commence late summer 2025.

Submit application materials and letter of support on the application webpage:

<https://www.huck.psu.edu/graduate-programs/training-grants/bioms-application-form>

Direct questions about the program to Drs. Seth Bordenstein (s.bordenstein@psu.edu), Jasna Kovac (jzk303@psu.edu), and Grace Deitzler (gfd5230@psu.edu).

Direct questions regarding the application site to Jean Pierce (jep32@psu.edu).