School of Medicine

The Biomedical Sciences (BMS) Research Master of Science (MS) and Doctor of Philosophy (PhD) Programs provide an integrated training environment that combines foundational and advanced study in molecular, cellular, systems, computational, and translational biomedical sciences. The BMS graduate program unifies diverse biomedical and biological research disciplines through a shared curriculum that promotes cross-disciplinary collaboration, quantitative reasoning, scientific communication, and hypothesis-driven research. The program's interdisciplinary framework promotes systems-level and translational approaches that integrate molecular and cellular mechanisms with physiology, bioelectric and bioengineering principles, bioinformatics, computational modeling, and environmental influences on health.

Students complete a rigorous core curriculum that establishes a common foundation in modern biomedical science, followed by advanced coursework, mentored research, and individualized training experiences tailored to master's or doctoral study. The curriculum emphasizes experimental design, data analysis, responsible conduct of research, and the development of technical and professional competencies required for contemporary biomedical research careers. Through elective coursework, concentration areas, and laboratory training, students develop specialized expertise while engaging in collaborative and translational research environments.

Graduates of the BMS program are prepared for careers in academia, biotechnology, pharmaceutical sciences, clinical and translational research, government, healthcare-related industries, and data-driven life sciences. Master's students develop applied research and workforce-oriented skills through project-based and translational training experiences, while doctoral students acquire advanced expertise in independent research, grant development, bioinformatics, and scholarly dissemination leading to original scientific contributions. Across both degree pathways, graduates emerge with the analytical, technical, and communication skills necessary to lead and contribute effectively in interdisciplinary biomedical research settings.

Programs

Master of Science Program

- Biomedical Sciences-Research (MS) (https://catalog.odu.edu/graduate/school-of-medicine/programs/biomedical-sciences-research-ms/)

Doctor of Philosophy Program

- Biomedical Sciences (PhD) (https://catalog.odu.edu/graduate/school-of-medicine/programs/biomedical-sciences-phd/)