

# MOLECULAR AND CELL BIOLOGY (PHD)

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The Department of Molecular and Cell Biology offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Molecular and Cell Biology. Modern molecular and cell biology is an interdisciplinary field that overarches classic research disciplines. Upon admission to the Molecular and Cell Biology Field of Study, students pursuing a Ph.D. or M.S. degree focus on one of four Areas of Concentration:

- Cell and Developmental Biology
- Genetics and Genomics
- Microbiology
- Structural Biology, Biochemistry and Biophysics

The M.S. in each of the Areas of Concentration may be either a coursework or research-based degree. Students enrolled in the program will develop competencies in critical thinking, hypothesis design and testing, and technical expertise required to conduct research as an independent scientist in molecular and cell biology. In addition to formal courses and laboratory research, training includes the development of skills in scientific writing and communication, and mentoring others in scholarly and research activities.

## Location

- Storrs Campus

## Modality

- In Person

## Requirements

The M.S. and the Ph.D. requirements in Molecular and Cell Biology conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. Specific course requirements for the M.S. and PhD in Molecular and Cell Biology are determined by the student's advisory committee consistent with the minimum requirements specified by the Graduate School. Ph.D. students are required to take section 01 of MCB 5884 MCB Research in Progress; section 02 of MCB 5884 MCB Research in Progress; and MCB 6000 Rotations in MCB Laboratories, unless they were enrolled in an MCB Master's program prior to entering the Ph.D. program. In special circumstances the advisory committee may waive some of these requirements. The Ph.D. in Molecular and Cell Biology does not have a related area or foreign language requirement, unless one is specified by the advisory committee.

## Learning Objectives

1. Knowledge: Demonstrate appropriate breadth and depth of disciplinary knowledge and comprehension of the major topics, theories, and issues of the discipline, including demonstration of specialized knowledge of a sub-field sufficient to carry out substantive independent research or creative pursuits
2. Research/applied skills: Use disciplinary methods and techniques ethically and professionally to apply knowledge, critically analyze, and, as appropriate to the degree, create new knowledge or achieve advanced creative accomplishments
3. Communication: Communicate proficiently and effectively to a specialist or non-specialist audience, verbally and in writing, a

structured, coherent academic presentation, representation, or argument that cogently summarizes their research or creative pursuit, relevant literature, and its significance at the level appropriate to discipline