

MOLECULAR BIOLOGY & INTERDISCIPLINARY LIFE SCIENCES

Graduate Program Information

Students of the molecular life sciences seek to reduce complex biological processes to a set of understandable molecular or chemical structure and function relationships. Integration of this knowledge into the context of complex living tissues interacting with the environment is the ultimate goal. This requires that the expertise from many diverse traditional disciplines be directed along converging experimental lines. The Ph.D. program in Molecular Biology & Interdisciplinary Life Sciences (MOLB-ILS) is designed to facilitate an interdisciplinary approach to graduate research, utilizing both traditional techniques and the latest advances in biotechnology, including the extraordinary power of recombinant DNA methodology. Participants in this program will take core courses in biochemistry, molecular biology and cell biology. Subsequent course work will be tailored for the individual student, depending upon his or her research emphasis. Participation in regular seminar programs will be expected to provide students with the widest possible scientific background. Financial aid, in the form of a limited number of MB teaching and research assistantships, is available on a competitive basis. Research Assistantships may also be available from individual faculty within the Molecular Biology & Interdisciplinary Life Sciences Graduate Program.

Only the most competitive students are admitted with assistantship support.

The MOLB-ILS program offers curricula leading to the M.S. and Ph.D. degrees in the areas of biochemistry, molecular genetics, molecular biology, cell biology, bioinformatics, and microbiology. Admission to the MOLB-ILS Program without deficiency is based on an undergraduate program essentially equivalent to that pursued by an undergraduate major in chemistry, biology, agronomy, horticulture, biochemistry, or microbiology at this university. An entering student is required to complete the Graduate Record Examination (General Aptitude). Undergraduate deficiency courses must be passed with a minimum grade of B.

Applicants are strongly encouraged to contact at least three individual program faculty before applying to identify a prospective advisor and laboratory in which to pursue graduate research. Previous course records and GPA standings (typically minimum of 3.3/4.0), GRE scores (typically minimum of 300 combined verbal and quantitative), TOEFL scores of foreign applicants (typically minimum of 550 on the paper-based or 213 on the computer-based), a letter of interest from the applicant that identified faculty laboratories of interest, and three letters of reference regarding research performance or potential are weighted heavily during the selection process.

Students with a B.S. degree in one of the disciplines listed above can expect to earn the MS degree in about 30 credits, including at least 6 credits of thesis research. The Ph.D. degree can be earned in about 30 to 40 credits of formal course work, plus additional thesis research credits, for a minimum total of 75 credits beyond the B.S. because research is central in both the M.S. and Ph.D. curricula, early selection of a research advisor is required.

Ph.D. degree candidates will successfully complete a written and oral qualifying examination based on their proposed research and the subject matter in the core courses (below) at the end of the first year of study. Also at this time, the master's or doctoral committee is organized to assist in planning a program appropriate to the background and goals of the

student. Ph.D. candidates will subsequently complete a comprehensive written examination and oral examination approximately at the end of the second year of study. A final, formal presentation and oral defense of the original research documented in the M.S. or Ph.D. thesis completes the degree requirements.