**BIOCHEMISTRY, MS**

Biochemistry & Molecular Biology Masters 1-Year Program

*A two-semester graduate program designed to enrich and improve credentials of graduates to apply for admission to medical, dental or other healthcare-related profession programs.*

**Program Overview**

This is a two-semester non-thesis program leading to a Master of Biomedical Science in Biochemistry and Molecular Biology degree.

The program is primarily designed to enrich and improve academic credentials of graduates. Our distinctive program emphasizes student development in four areas (coursework, experiential learning, presentation skills, and personal growth), and allows students to broaden and strengthen their academic foundation for further intellectual development, such as gaining entrance into medical-, dental- or health profession-related schools.

The core curriculum emphasizes clinical applications of biochemistry and molecular knowledge. Required courses include Human Medical Cellular Biochemistry and Human Medical Metabolic Biochemistry which are equivalent to Tulane's first-year medical biochemistry course, Medical Biochemistry Grand Rounds Externship Seminar which provides students with a unique opportunity to experience Medicine Grand Rounds from the biochemical, molecular and clinical perspectives, and the Department Seminar series exposing students to novel research in the field of biochemistry.

All students benefit from several other biochemistry- or molecular biology-related courses. Program electives range from more medically-related courses such as Chromosomal Instability and Cancer, Molecular Basis of Pediatric Disease, and Signal Transduction and Hormone Action to more research-related courses such as Biochemistry Research, Graduate-level Biochemistry, and Biomedical Statistics and Data Analysis. Additionally, the program has reciprocal relationships with certain courses in the Graduate Program in Biomedical Sciences and the Department of Microbiology and Immunology. Students may elect to take Tulane first-year medical course equivalents in Graduate Medical Microbiology and Medical Immunology, while enhancing their writing and presentation skills with Biochemistry Workshop – a journal club style course.

All courses are taught within the Tulane School of Medicine by full time faculty.

**Two-Year Master’s Program in Biochemistry & Molecular Biology**

*A four-semester graduate program designed to provide advanced training in the biochemical sciences and prepare students for a career in research.*

**Program Overview**

This is a two-year thesis-required program for the study of biochemistry and molecular biology leading to a Master of Biomedical Science in Biochemistry and Molecular Biology degree.

The program is designed to improve academic credentials and scientific research experience of graduates. Our distinctive program emphasizes student development in five areas (coursework, laboratory skills, independent thought, presentation skills, and personal growth), allows students to broaden and strengthen their academic foundation, and equips students with basic and advanced lab skills for a career in academic or industrial research.

Class size is limited to approximately 10 students. Students will take Graduate Biochemistry, Cell Biology, and Biostatistics courses, with a strong emphasis on research application of biochemical and molecular knowledge. These courses are taken along with first-year PhD students at the Tulane School of Medicine. Additional courses include Structure and Function of Biomolecules and Chromosomal Instability and Cancer. All students will benefit from several other Biochemistry- or Molecular Biology-related courses, including a Biochemistry and Molecular Biology Seminar series, a Biochemistry Workshop, and a course on Academic Writing and Critique. All courses are taught within the Tulane School of Medicine by full time faculty.

In year two, students will perform bench research toward the master’s thesis and experience all aspects of basic research, under supervision of a faculty advisor, from the development of an idea and scientific rationale, to experimental design and execution, data analysis, and possibly the drafting of a manuscript.

**Requirements**

For the one year Program, students must take 30 credit hours of course work during the fall and spring semesters to complete the requirements for the degree. Additionally, students are required to take the NBME Shelf Exam in Biochemistry as a culminating experience. Although not thesis based, this degree does involve several written assignments and oral presentations as part of the required course work. No research is required. Therefore, this is considered a “non-thesis” degree.

For the two year Program, students must take 30 credit hours of coursework by the end of the spring semester in year two, and they must complete and defend a master’s thesis by the end of the summer in year two. Thesis research may commence at the beginning of year one, upon formation of
the advisory committee. The student is expected to devote full time to research after the spring semester of year one, and until the thesis defense in the summer of year two.