

# ABOUT US

## About McWilliams School of Biomedical Informatics at UTHealth Houston

McWilliams School of Biomedical Informatics (<https://sbmi.uth.edu/>), formerly UTHealth Houston School of Biomedical Informatics (SBMI), is one of the seven schools of UTHealth Houston (<https://www.uth.edu/>) which, is a component of the 14 institutions of The University of Texas System (<https://www.utsystem.edu/>).

McWilliams School of Biomedical Informatics is the only academic biomedical informatics program in Texas, the only free-standing school among 70 related programs in the nation, and one of the largest programs of its kind in the world.

## Program Overview

Biomedical Informatics is the study of how health data is collected, stored, and communicated. The field also explores how the data is processed into health information suitable for scientific, administrative and clinical decision making and how computers and telecommunications technology can be applied to support these processes. Biomedical informaticians are in great demand and may work in various clinical, research and educational environments.

## Essential Skills for Biomedical Informaticians

Biomedical Informatics is a collaborative discipline that builds on several other fields such as information sciences, biomedicine, computer science, and mathematics. However, the field is also interdisciplinary and collaborative. For students who may need help gaining competencies in these foundation areas, courses are available to help. Solid background knowledge in these support areas is consistent with student success in the study of Biomedical Informatics.

To successfully perform the duties of a health informatician, an individual must be able to think critically and analytically, must demonstrate motivation, and must have a technical understanding of the computing environment that is the basis for informatics work. Students must be able to address problems in a clear and innovative manner. Other requirements include the ability to communicate in English both verbally and in writing at the graduate level and to work in interdisciplinary teams. Depending on their application area, students must have demonstrable proficiency with certain programming languages, college algebra, computer literacy skills, anatomy, physiology, health language, clinical care, and operational characteristics of healthcare.

## Program Philosophy

The ultimate goal of the program is to use informatics to improve the health of the people of Texas. McWilliams School of Biomedical Informatics strongly believes that healthcare will increasingly require a cooperative interaction among the health disciplines. The result will be practitioners who understand the technology, data, information, knowledge, assumptions and decision making of others as they attempt to design, provide and evaluate healthcare in the 21st century.

To that end, the Biomedical Informatics program stresses the development of interdisciplinary teams to evaluate and address the complex informatics issues that will face healthcare in the next century.

Students will enter the Biomedical Informatics program with a strong base from their previous undergraduate or graduate studies, and will study how to communicate knowledge across traditional, professional, and organizational barriers. As they progress, students will acquire the principles and knowledge needed to organize, store, display, communicate, and evaluate that knowledge across a variety of systems – electronic, social, and political.

The Biomedical Informatics program will start from a strong scientific base and move to the application of informatics in a variety of areas related to the interests of students and faculty. These areas of interest may include, but are not limited to computational knowledge, electronic health records, health data science, health information visualization or bioinformatics.

Biomedical Informatics is always undergoing rapid change. New technologies, conceptual understandings, and computational processes ensure that the future will bring increasing rates of change and development. Students will have the knowledge and skills to address present issues and the adaptability to address future ones. The Biomedical Informatics program continuously aims to meet the needs of students, develop new research to advance the frontiers of the science, and be an active participant in the development and application of informatics initiatives in the community.

## Program Description

The Program in Biomedical Informatics is designed to be transdisciplinary in its focus. The program is the first in the nation that does not reside in a discipline-specific professional school. Students come from a variety of disciplines, and work in interdisciplinary teams to better understand the knowledge unique to each discipline and how that knowledge must be translated for use by other disciplines.

The certificate, masters and doctoral degree programs incorporate an interdisciplinary and integrative design that is unique to the field of biomedical informatics. Many existing informatics master and doctoral programs are organized around a specific discipline in which applications of informatics within that discipline are emphasized, e.g., medical informatics, nursing informatics, and dental informatics. The Biomedical Informatics program, on the other hand, is designed to be inherently transdisciplinary and integrative. This means that the fundamental informatics concepts that transcend and apply to all traditional healthcare disciplines are emphasized. Moreover, these programs will identify and teach the major informatics concepts that integrate and link diverse health disciplines, creating focus on patient healthcare.