

1a School of Health Information Sciences

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Source

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School of Health Information Sciences

History and Purpose

The School of Health Information Sciences (SHIS) is the first such school in the nation to offer graduate degrees in health informatics. Although its focus became informatics in 1997, the school's name was changed in 2001 to reflect its new mission. It is now recognized nationally and internationally for innovative, interdisciplinary approaches to research and education. This new knowledge is being applied to research, health care, and the education of outstanding informatics leaders. The school's mission is to provide educational and research opportunities in informatics to health care professionals and biomedical scientists in interdisciplinary teams. As health care is becoming a cooperative interaction among the health and bioscience disciplines, there is a need for health practitioners and scientists who better understand the data, information, knowledge, assumptions and decision making of others as they attempt to design, provide and evaluate health care and scientific data in this century.

Instructional Programs

Currently the school offers two degrees, a master of science in health informatics (MS) and a doctor of philosophy in health informatics (PhD).

SHIS offers interdisciplinary graduate-level courses in health informatics for students enrolled in the health science center's schools and for health professionals and scientists in the Texas Medical Center (TMC) and across the state. The MS degree focuses on the study of how health and biomedical science data are collected, stored and communicated and how the data are processed into health information suitable for research, administrative, and clinical decision making.

The curriculum stresses the development of interdisciplinary teams to evaluate and address the complex informatics issues that face healthcare and biomedical research. The identified issues are based on real-world problems. Students have been able to solve some of these problems during their study with faculty mentors. The PhD program is designed for graduates to research and evaluate new regions or domains of health informatics, lead interdisciplinary teams and effectively communicate research findings to peers and practitioners. The newly inaugurated joint degree programs with the School of Public Health further promote the collaboration and interdisciplinary activities for the two schools.

Students come from a wide variety of backgrounds with a variety of skills. Each student, along with a faculty admissions committee, determines the student's curriculum from a matrix of courses. Scientists and practitioners across UTHSC-H, the Texas Medical Center, and beyond provide a real world laboratory for honing reasoning, knowledge and research skills. The programs receive strong support from UTHSC-H and other TMC institutions.

There are three focus areas. Originally, the curriculum for the degrees in Health Informatics was primarily clinically focused. Currently SHIS is enhancing two other informatics focus areas within the MS and PhD programs.

First focus area, clinical informatics:

- + Cognitive science in medicine
- + Artificial intelligence, knowledge modeling, and decision support
- + Information retrieval, data mining, and database design
- + Ontology
- + Practice guidelines
- + Electronic medical records
- + Telemedicine
- + Informatics for biosecurity and disaster relief
- + User interface design and human-computer interaction in health care
- + Information display and visualization
- + Patient safety
- + Informatics for extreme environments
- + Medical decision making

Second focus area, computational biomedicine:

- + Bioinformatics
- + Computational biostatistics
- + Biomedical engineering sciences
- + Modeling and simulation of biomedical systems and processes
- + Image and signal analysis
- + Image pulse sequences
- + Complex dynamical systems in biomedicine

Third focus area, learning and technology:

- + Instructional research and evaluation
- + Educational research design
- + Statistics and measurement
- + Instructional technology
- + Use and evaluation
- + Instructional design
- + Learning sciences