Biomedical Informatics
Research and Education in the School of Biomedical Informatics, UTHealth
Biomedical informatics

- Motivated by efforts to improve human health
- Interdisciplinary, scientific field that
- Studies and pursues the effective uses of
  - biomedical data
  - information, and
  - knowledge
- For
  - scientific inquiry
  - problem solving, and
  - decision making
Other Related Disciplinary Names

- Medical Informatics
- Health Informatics
  - Clinical Informatics
  - Public Health Informatics
  - Consumer Informatics
  - etc
Organization and Conference

- **AMIA**
  - American Medical Informatics Association
    - Annual AMIA Annual Conference (Fall)
    - Annual AMIA Joint Summits and Translational Science (Spring)

- **IMIA**
  - International Medical Informatics Association
    - Medinfo, every 2 years
      - 2017 Tianjin, China
    - NI (Nursing Informatics), every 2 years
      - 2016 Geneva, Switzerland
Organization and Conference

- HIMSS
  - Health Information Management System Society
    - Annual Conference & Exhibition
    - Central
    - AsiaPac
    - Other regional conference in Europe, Latin America, Middle East, etc.

- AHIMA
  - American Health Information Management Association
    - Annual Conference & Exhibition
About UTHealth

- The University of Texas Health Science Center at Houston
- Established in 1972
- Home to
  - schools of biomedical informatics,
  - biomedical sciences,
  - dentistry,
  - medicine,
  - Nursing, and
  - public health
- includes The University of Texas Harris County Psychiatric Center
- The university’s primary teaching hospitals include
  - Memorial Hermann-Texas Medical Center,
  - Children’s Memorial Hermann Hospital and
  - Harris Health Lyndon B. Johnson Hospital.
- For more information, visit www.uth.edu.
Texas Medical Center
School of Biomedical Informatics (SBMI)

Mission:
- educate future scientists and professionals in biomedical informatics and health information technology,
- conduct informatics research to improve health care and advance biomedical discovery and
- develop advanced informatics tools to solve problems in health care
In 1997, began to offer a Master of Science in health informatics.

SBMI currently offers certificate programs in health informatics, a Master of Science in Health Informatics with two tracks: a traditional research track and an applied health informatics track, a Doctor of Philosophy in Health Informatics and dual-degree programs with the School of Public Health.

Nearly 300 students are working toward a degree or certificate from SBMI. The average age of SBMI's students ranges between 34 to 39.
Placement of SBMI Graduates

- PhD graduates
  - research
  - teach

- MS or Certificate Graduates:
  - Implementing electronic health record systems (EHRs).
  - analyze the EHR needs of the hospitals by assessing the number of users and then train workers to use the systems.

- Some other common jobs are:
  - systems analysts
  - informatics support analysts
  - informatics project managers
  - chief medical information officers
  - chief nursing information officer

- [Careers in Health Informatics video](#)
Research at SBMI

- Transdisciplinary Faculty Background:
  - health professions,
  - basic sciences,
  - biomedical sciences,
  - social sciences,
  - cognitive sciences,
  - engineering,
  - bioengineering and
  - computer science backgrounds.

- inventing and evaluating new ways to capture, store, access, and evaluate health care and biomedical research knowledge and information.
My Research

- **Patient Safety**
  - Reporting patient safety events
    - Data quality
    - Healthcare quality
  - Clinical decision support
    - Reduce reoccurrence
    - Learn from reported events
- **Aging in place**
  - User-centered design
    - Healthcare providers
    - Residents and family members
Grants

- Federal Level
  - AHRQ
    - The Agency for Healthcare Research and Quality
  - ONC
    - The Office of the National Coordinator for Health Information Technology

- State Level
  - University of Texas system Patient Safety Program
  - University of Texas Kenneth I. Shine Academy of Health Science Education

- University Level
  - Inter-Professional Ethics McGovern Center for Humanities and Ethics


Liang C, Gong Y. Developing a patient safety ontology for knowledge management, data integration, and decision making. ICBO 2014: 70-72(Student is first author)


Gong Y, Kang H. Usability and clinical decision support in Burner editor, Clinical decision support system: theory and practice. 3rd edition


E-Reporting: improving patient safety: the importance of improving data quality in voluntary medical incident reporting systems, Advance healthcare network for health information professionals, Posted on Sep 15, 2014

invited based upon the 60-minute presentation at AHIMA 2013
Courses offered

- Clinical Decision Support
- Health Data Display
- Clinical Communication
- Practicum in Health Informatics
- Advanced Preceptorship
Course Delivery Methods

- Moodle
  - Demo
- Canvas
- Adobe Connect
- GoToMeeting
Student Mentoring

- I have mentored 1 postdoc, 17 PhD students and >60 Masters students among which 3 PhD students have completed.
- PhD Placement
  - Lei Hua, Grant supported, PhD, May 2014
    - 2011: The second place of poster award, The University of Missouri
    - Placement: Founder of WitWick Consulting Group
  - Saif El-Din Sherif Khairat, MS, PhD, Dec 2011
    - 2010: Curator’s Grant-In-Aid (GIA) Scholarship, University of Missouri
    - Placement: Clinical Assistant Professor, Institute for Health Informatics, University of Minnesota -- Twin Cities
    - 2015: Assistant Professor of Health Informatics, University of North Chapel Hill
  - Patricia Alafaireet, MHA, PhD, May 2010
    - Placement: Director of Informatics, HMI Group, Assistant Professor of Health Informatics, University of Missouri
Service

- **UTHealth Campus Level:**
  - Steering Council, Inter-Professional Collaboration (IPC), 2013 – present
  - Advisory Committee, Consortium on Aging, 2014 – present

- **School Level:**
  - Coordinator for Master’s Programs (All tracks), SBMI, 2014-2016
  - Committee member of Curriculum Committee, SBMI, 2014-2016
  - Committee member of Scholarship/Awards, SBMI, 2014-2016
National & International Service

- Academic Leadership
  - Member of AMIA Working Group Steering Committee
- Grant Proposal Reviewer and major informatics journal reviewer
  - AHRQ HITR study section
  - NLM SEP STUDY SECTION
- Editorial Board
  - Safety in Health
  - Journal of Medical Internet Research
- Associate Editor
  - BMC Medical Informatics and Decision Making
  - Journal of Health Administration Education