School of Biomedical Informatics

Background and Programmatic Priorities

The UTHealth School of Biomedical Informatics (SBMI) advances medicine by addressing current and emerging problems related to patient safety, quality of care, and service delivery through sophisticated information technology, state-of-the-art informatics research, education of healthcare professionals, health IT workforce training, and the preparation of future teachers and scientists.

The field of biomedical informatics informs clinical trials and allows us to improve best practices for clinicians, nurses, and other healthcare providers; accelerates scientific discoveries through unparalleled access to data; drives planning and policy to ameliorate population health; improves risk management and operational efficiency for health service delivery organizations; and advances the development and refinement of electronic medical records and other technological tools that impact patient care through more comprehensive, integrated data – making personalized care an achievable goal.

School of Biomedical Informatics Distinctions

▌ Founded in 1997

▌ First school in the nation devoted exclusively to graduate programs in biomedical and health informatics

▌ The only free-standing school of biomedical informatics in the country

▌ The only academic biomedical informatics program in Texas

▌ 20 full-time faculty; 54 adjunct faculty

▌ 4 members of the American College of Medical Informatics

▌ Alumni in all major Texas Medical Center hospitals and throughout the U.S. healthcare industry

▌ Multiple tech transfer spin-offs

▌ FY 2013 projected enrollment: 350

▌ FY 2013 projected operating budget: $10 million

Degrees and Certificates Offered

▌ PhD in Health Informatics

▌ MS in Health Informatics

▌ MS in Applied Health Informatics

▌ Dual degrees (MS and PhD)
in Health Informatics and Public Health

▌ Certificate in Health Informatics

▌ Certificate in Applied Health Informatics

▌ Certificate in Public Health Informatics

Collaborations

▌ Gulf Coast Consortia and The Keck Center for Interdisciplinary Bioscience Training

▌ Gulf Coast Regional Extension Center

▌ Houston Technology Center

▌ Harris County Healthcare Alliance

▌ NASA

▌ National Center for Cognitive Informatics and Decision Making in Healthcare

▌ Organizations in Brazil, China, India and Japan

▌ UTHealth Center for Clinical and Translational Sciences

▌ UTHealth/Memorial Hermann Center for Healthcare Quality and Safety

▌ UT Physicians

Collaborations continued

- Memorial Hermann-Texas Medical Center and Memorial Hermann - TIRR

- Harris Health System

- The Methodist Hospital, UT MD Anderson Cancer Center, Baylor College of Medicine, Rice University, UT Medical Branch at Galveston, University of Houston, St. Luke's Episcopal Health System

- Other local, state, national, and international organizations and scientists

Primary Research and Education Focus Areas

Clinical and Translational Informatics | SBMI combines computer, cognitive and medical sciences to advance efficient, safe, personalized, high quality healthcare. SBMI develops cutting-edge methodologies, tools, and approaches to analyze and address some of the most pressing challenges confronting healthcare today. Translational informatics allows meaningful communication and collaboration between traditionally disparate research and clinical partners in order to coordinate cost-effective initiatives that, among other foci, include the integration and analysis of biological and clinical data, knowledge-sharing among multiple centers, and the consolidation of information from multiple clinical trials, which facilitates increased knowledge and the generation of new questions and novel avenues of research.

Cognitive Informatics | Cognitive informatics is a multidisciplinary area focused on the study of medical decision making, cognitive foundations of health behaviors, and the effective use of computer-based information technologies in healthcare – crucial elements to addressing the urgent and long-term cognitive challenges associated with health information technology adoption, meaningful use and every aspect of health service consumption and delivery. SBMI's research is grounded in cognitive science with a strong emphasis on the analysis of medical error, developing models for decision making, and the design and evaluation of effective human-computer interaction. Studies are guided by a concern for improving the performance of individuals and teams in the healthcare system, as well as the need to create and refine support tools for patients and providers.

Applied Informatics | Applied informatics is a graduate education program devised to create a health information technology workforce equipped with the knowledge and skills required to assess, implement, maintain, and evaluate Electronic Health Records (EHRs) and computerized health information systems. SBMI applied informatics course topics include the modern American healthcare system, healthcare legislation, primary care facilities, health information security protocols, project management, and change management, among others.

Public Health Informatics | SBMI has assumed a leadership role in developing cost-effective solutions to crucial public health and community care needs through diverse initiatives, inclusive of information technology networks, advanced data analysis, online education and learning, and telemedicine. One project in this area is the Gulf Coast Regional Extension Center (GCREC), which is funded by a grant from the Office of the National Coordinator for Health IT and directed by SBMI. GCREC assists healthcare providers in implementing EHRs within their clinical environments; support includes EHR selection, project management, workflow analysis, reaching meaningful use objectives, and improving patient safety and quality of care.

Funding Priorities

Big Data/Clinical Warehouse Initiatives	Dean's Discretionary Current-use and Endowment
Junior Faculty Seed Grants	Center and School Naming Opportunities
General Endowment	Electronic Health Records Student Laboratory
Technology Transfer/Entrepreneurship	Emerging Research Initiatives

How You Can Help

For more information or to learn how you can support excellence in biomedical informatics education and research, please contact:

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UTHealth
The University of Texas
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School of Biomedical Informatics

Jiajie Zhang, PhD
Dean and Professor

Dr. Doris L. Ross Professor
Director, National Center for Cognitive Informatics and Decision Making

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Education

- PhD, 1992, University of California, San Diego (Department of Cognitive Science)
- MS, 1991, University of California, San Diego (Department of Cognitive Science)
- BS, 1983, University of Science & Technology of China (Department of Biological Sciences)

Research Areas

- Biomedical Informatics
- Human-centered computing
- Medical errors
- Information display & visualization
- Cognitive science
- Medical decision making

Zhang is the dean and Dr. Doris L. Ross Professor at the UTHealth School of Biomedical Informatics (SBMI). A researcher, educator and administrator, he was the associate dean for research from 2002 to 2012. Zhang has spent the past two decades conducting research in biomedical informatics, cognitive science, human-centered computing, decision making and information visualization. He has authored more than 150 publications and has served as the principal investigator (PI) or co-PI on more than two dozen grants from diverse federal, state and private agencies. Most recently, he has been the PI of a $15 million grant awarded to establish the National Center for Cognitive Informatics and Decision Making in Healthcare under the aegis of ONC's SHARP program for patient-centered cognitive support. As an educator, he has taught courses in human-computer interaction, EHR usability, information visualization and technology-mediated social dynamics. He has supervised or co-supervised nearly twenty PhD students and seventy master's students. During his tenure as the associate dean for research, Zhang helped the school rapidly increase its research funding and expenditures. He has been instrumental in establishing several research centers at SBMI, including the aforementioned National Center for Cognitive Informatics and Decision Making in Healthcare.

Honors

- Dr. Doris L. Ross Endowed Professorship
- Elected Fellow, American College of Medical Informatics
- John P. McGovern Outstanding Teacher Award
- Recognition for Outstanding Leadership as Chair of a Faculty Governance Organization (UTHealth, SBMI)

SBMI Timeline

1972 The UT Board of Regents established The University of Texas Health Science Center at Houston, merging six existing schools and programs into the new organization, including the Dental Branch (established in 1905), the Division of Continuing Education (1948), the Graduate School of Biomedical Sciences (1963), the Medical School (1967), the School of Public Health (1967) and the Speech and Hearing Institute (1951).

1973 The University of Texas School of Allied Health Sciences was organized as a unit of The University of Texas Health Science Center at Houston led by acting dean M. Alton Hodges, DrPH.

1976 M. Alton Hodges, DrPH, was appointed dean of the school.

1981 The University of Texas properties were declared a part of the Texas Medical Center, adding approximately 140 acres to the campus.

1983 M. Alton Hodges, DrPH, retired as the dean of the School of Allied Health Sciences, and Judith B. Craven, MD, MPH, became the new dean.

1992 Judith B. Craven, DrPH, retired as the dean of the School of Allied Health Sciences, and Doris L. Ross, PhD, became the dean pro tempore.

1997 The University of Texas School of Allied Health Sciences at Houston reorganized to focus on health informatics. This effort was led by the school's interim dean Doris L. Ross, PhD.

1999 The School of Allied Health Sciences starts offering a Master of Science degree approved by UT System and accredited through The Higher Education Coordinating Board.

2000 The School of Allied Health Sciences starts offering a Doctor of Philosophy degree approved by UT System and accredited through The Higher Education Coordinating Board.

The School of Allied Health Sciences graduates the first class in the master's program.

2001 The University of Texas School of Allied Health Sciences at Houston officially changed its name to The University of Texas School of Health Information Sciences at Houston, reflecting its mission as the first school in the nation to offer graduate degrees in health informatics.

2002 The founding dean of the School of Health Information Sciences, Doris L. Ross, PhD retired in December.

2003 Jack Smith, MD, PhD, became the interim dean of the School of Health Information Sciences in January.

2004

The School of Health Information Sciences acquired a supercomputer cluster which was ranked 260th fastest in the world.

2005

Jack Smith, MD, PhD, was named dean of SHIS in December.

2006

The National Institutes of Health awarded The University of Texas Health Science Center at Houston a $36 million, five-year grant to enhance clinical and translational research, ultimately improving patient care and community health. The university became home to one of the nation's first twelve Centers for Clinical and Translational Sciences and the only one of its kind in Texas. Elmer Bernstam MD, MSE, SHIS associate professor, was named director of the biomedical informatics component.

2007

Jiajie Zhang, PhD, was announced the first holder of the Dr. Doris L. Ross professorship.

2010

In April, SHIS received a $15 million stimulus grant to establish the National Center for Cognitive Informatics and Decision Making in Healthcare (NCCD). The grant was awarded as a part of the Office of the National Coordinator for Health Information Technology's Strategic Health IT Advanced Research Projects (SHARP) Program, which seeks to support improvements in the quality, safety and efficiency of health care, through advanced information technology—specifically focusing on improving electronic health records.

In April, SHIS received $15.3 million to establish the Gulf Coast Regional Extension Center (GCREC). RECs are designed to address unique community requirements and to support and accelerate provider efforts to become meaningful users of electronic health records.

In June, the School of Health Information Sciences officially changed its name to The University of Texas School of Biomedical Informatics at Houston (SBMI) to better reflect the research and academic focus of the school.

2011

SBMI began offering the applied health informatics track for the master's program, which focuses on the practical application of health informatics rather than theory and research.

2012

In April, Jiajie Zhang, PhD, became interim dean of SBMI.

In fall 2012, the UTHealth School of Biomedical Informatics started offering a certificate in applied health informatics to help create an educated workforce in Health Information Technology.

2013

In March, Jiajie Zhang, PhD, was named the dean of UTHealth School of Biomedical Informatics.

SBMI Research Centers & Programs

Strategic Health IT Advanced Research Projects Program (SHARP)

- The Office of the National Coordinator for Health Information Technology (ONC) supports research to address well-documented problems that impede the adoption of health IT. The knowledge generated and innovations created from SHARP will accelerate progress toward the meaningful use of health IT and a high-performing, adaptive, nationwide health care system.

- The Strategic Healthcare IT Advanced Research Projects (SHARP) program is led by major collaborative efforts at the University of Illinois at Urbana-Champaign, The University of Texas Health Science Center at Houston, Harvard University, the Mayo Clinic of Medicine and Massachusetts General Hospital and each institution focuses on one of the following areas:
    - Security and health information technology
    - Patient-centered cognitive support
    - Health care application and network design
    - Secondary use of HER information
    - Prototype Health care intranet

- SHARPC is led by researchers at SBMI who are focusing on patient centered cognitive support. SHARPC includes collaborations with 8 partner institutions whose researchers have expertise in biomedical and health informatics, cognitive science, computer science, clinical sciences, industrial and systems engineering and health services research.

- SHARPC involves four projects focused on clinical decision making and patient-centered cognitive support:
    - Project 1: Work-centered design of care process improvements in HIT
    - Project 2A: Cognitive foundations for decision making: Implications for decision support
    - Project 2B: Modeling of setting-specific factors to enhance clinical decision support adaptation
    - Project 3: Automated model-based clinical summarization of key patient data
    - Project 4: Cognitive information design and visualization: Enhancing accessibility and understanding of patient data

- Jiajie Zhang, PhD, SBMI dean, is the principal investigator of SHARPC and the director of the National Center for Cognitive Decision Making in Healthcare (NCCD), which the SHARPC initiative falls under.

Gulf Coast Regional Extension Center (GCREC)

- GCREC focuses on primary care practices and hospitals and their health information exchange integration to meet local, state, and federal requirements. GCREC helps these practices fulfill their shared goal of improving the health of the residents in the gulf coast region.

- GCREC's priority is helping providers fully understand and take advantage of the full benefits of electronic health records. The center enables providers to achieve meaningful use objectives, minimize financial and administrative burdens, reduce costs associated with medical errors, improve patient safety and quality of care and prepare and position providers for future pay for performance, specifically GCREC can:

  - Assist in selection of the right EHR for the needs of your practice
  - Provide project management to support the new system implementation
  - Facilitate and measure meaningful use of EHRs
  - Provide workflow analysis
  - Provide information on privacy and security
  - Assist with federal documentation

- GCREC is directed by SBMI through a $15 million grant from the Office of the National Coordinator for Health IT (ONC).

The Center for Clinical and Translational Sciences (CCTS)

- The CCTS in Houston was originally funded with a $36 million, 5-year grant in 2006 by the National Institutes of Health (NIH) through its Clinical and Translational Science Awards program.

- The NIH CTSA program was created to accelerate the translation of laboratory discoveries into patient treatments and Houston's CCTS is one of 60 national centers established through the program.

- Headquartered at UTHealth, Houston's CCTS is operated by UTHealth, The University of Texas MD Anderson Cancer Center and Memorial Hermann Hospital in the Texas Medical Center.

- In July 2012, Houston's CCTS received a $20 million renewal grant from the NIH.

- The CCTS biomedical informatics component works at institutional and individual investigator levels to transform clinical and translational research by improving communication and integrating disparate data sources, including clinical, laboratory, regulatory and administrative data.

- Elmer Bernstam, MD, MSE, SBMI professor and associate dean for research is the director of the CCTS biomedical informatics component.

The Center for Computational Biomedicine (CCBM)

- Over the past several years, computational issues for technology-driven biomedical research have proliferated. The Center for Computational Biomedicine (CCBM) at SBMI pursues collaborative, interdisciplinary research and education within the broadly defined scientific area of computational biomedicine. This new discipline is defined by and indeed resides upon the interface between the computational sciences (i.e., signal analysis, data mining and computer science in general) and a wide variety of biomedical disciplines including neuroscience, genomics, cardiology and structural biology to name a few. Fundamentally, computational biomedicine addresses the modeling, acquisition, processing and long-term storage of the ever-increasing volume of biomedical information.

- The Center encourages the development of collaborative relationships among faculty and others around research and education in related to the mission of the university. The Center emphasizes the highly interdisciplinary nature of this emerging scientific discipline in health care and biomedical research. The Executive Committee of the Center is composed of representatives from each of the other five UTHealth schools.

- The Center was moved from Vanderbilt University to UTHealth after the director of CCBM received a $2.8 million CPRIT Rising Star recruitment award.

- Hua Xu, PhD, SBMI associate professor is the director of the CCBM.

Faculty Research Areas

Noriaki Aoki, MD, PhD, Associate Professor
Decision science and clinical decision support
Data mining and modeling in health care
Clinical informatics in extreme environments
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Clinical guideline classification; Information retrieval;
Clinical decision support; Consumer informatics
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Patient safety
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Human-centered design in health care
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biomedical informatics; Health information
exchange; Health policy: Patient safety
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Software development for Palm and web
technologies; Biomedical and statistical modeling
Using algorithms in diverse areas
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Conducting design, analysis, interpretation and
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Impact of Health IT on clinical decision making
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Clinical decision support
Identifying and reducing medication errors, adverse
drug events and other patient safety hazards
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Robert Vogler, DSN, Associate Professor
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Un-witnessed patient falls
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Hongbin Wang, PhD, Professor, Associate Dean
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Faculty Research Areas (continued)

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Natural language processing; Biomedical literature
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Syntactic and semantic parsing
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Jiajie Zhang, PhD, Professor, Dean
Human-centered computing; Medical errors
Information display and visualization; Medical
decision making; Cognitive science
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Wenjin (Jim) Zheng, PhD, Associate Professor
Bioinformatics, Biological data mining & networks
Genomics; Systems biology; Biomedical ontology
and knowledge representation
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Visit **https://sbmi.uth.edu/research/faculty-research-areas.htm** to learn more about SBMI's faculty members and their research.

Distinguished SBMI Alumni

Juliana Brixey, RN, PhD

- SBMI faculty, assistant professor
- Research interests:
  - How interruptions change workflow
  - Use of social media for online students
- SBMI Doctorate in health informatics (2006)

Adol Esquivel, MD, PhD

- Assistant Vice President for Performance Measurement Systems and Comparative Effectiveness Research, St. Luke's Episcopal Health System
- SBMI adjunct associate professor
- SBMI Master's degree in health informatics (2005)
- SBMI Doctorate in health informatics (2008)

John C. Frenzel, MD, MS

- Chief Medical Information Officer at University of Texas MD Anderson Cancer Center
- SBMI adjunct professor
- Professor of anesthesiology and perioperative medicine at MD Anderson
- SBMI Master's degree in health informatics (2002)

Yang Gong, MD, PhD

- SBMI faculty, associate professor
- Research interests:
  - Human-centered design in clinical informatics
  - Medical incident reporting and management systems
  - Health information technology supporting aging-in-place
- SBMI Doctorate in health informatics (2006)

C. Ed Hsu, PhD

- Former SBMI associate professor
- Currently pursuing a JD in health law
- SBMI adjunct associate professor
- SBMI Master's degree in health informatics (2000)

Constance Johnson, PhD

- Duke University School of Nursing
  - Director of nursing informatics
  - Associate professor
- SBMI Master's degree in health informatics (2001)
- SBMI Doctorate in health informatics (2003)

Stephen L. Jones, MD, MS

- Research scientist for The Methodist Hospital department of surgery
- Principal investigator of a $14.4 million health care innovation grant from the Center for Medicare & Medicaid Services (CMS)
  - Largest grant ever awarded to Methodist for academic research
- SBMI Master's degree in health informatics (2010)
- SBMI postdoctoral fellow

Patrick J. McGinnis, MD, MS, MBA

- Director of Medical Informatics, Memorial Hermann Hospital
- SBMI adjunct assistant professor
- SBMI Master's degree in health informatics (2001)

Meredith Nahm, PhD

- Duke University
    - Associate Director for Clinical Research Informatics, DTMI Biomedical Informatics Core
    - Associate Director for Academic Programs, Duke Center for Health Informatics
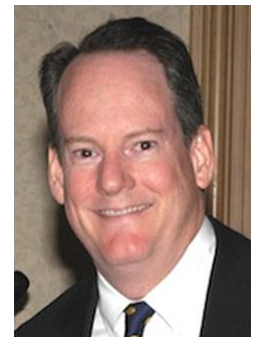- SBMI Doctorate in health informatics (2010)

Rachel Richesson, MPH, PhD

- Associate Professor at Duke University School of Nursing
- SBMI master's degree in health informatics (2000)
- SBMI Doctorate in health informatics (2003)

John Riggs, MD, MS, PhD

- Medical Director of Clinical Information Systems at the Harris County Hospital District
- UTHealth Medical School associate professor of obstetrics & gynecology
- SBMI adjunct associate professor
- SBMI Master's degree in health informatics (2000)

Muhammad F. Walji, PhD

- UTHealth School of Dentistry
    - Director of Informatics, Office of technology services and informatics
    - Associate Professor, Department of diagnostic & biomedical sciences
- Recipient of a 2012 UT System Regents' Outstanding Teaching Award
- SBMI adjunct assistant professor
- SBMI Master's degree in health informatics (2002)
- SBMI Doctorate in health informatics (2006)

SBMI Advisory Council
2013-2014

Doris Ross, PhD – Founder of SBMI and Life Member

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SERVICE, ADVOCACY, INVESTMENT

Houston Facts & Figures

- Houston was founded on August 30, 1836 by brothers Augustus Chapman Allen and John Kirby Allen on land near the banks of Buffalo Bayou.

- Houston is the fourth most populous city in the nation (trailing only New York, Los Angeles and Chicago), and is the largest in the southern U.S. and Texas.

- The Houston-Galveston-Brazoria Consolidated Metropolitan Statistical Area (Houston CMSA) consists of eight counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller

- The Houston CMSA covers 8,778 square miles, an area slightly smaller than Massachusetts but larger than New Jersey.

- Founded in 1836, the City of Houston has a 2010 population of 2.1 million, according to the U.S. Census Bureau -- www.census.gov. Houston's population in 1850 was listed as 2,396.

- The metro area's population of 5.95 million in 2010 is 6th largest among U.S. metropolitan statistical areas, according to www.census.gov, and a 26% increase since 2000.

- Harris County's population is 4,092,459 people.

- The three-airport system served 49.5 million passengers in 2010, including over 7 million international travelers.

- If Houston were an independent nation, it would rank as the world's 30th largest economy

- The Third Quarter 2010 ACCRA Cost of Living Index shows that Houston's overall after-taxes living costs are 9% below the nationwide average, largely due to housing costs that are 21% below the average.

- Houstonians eat out more than residents of any other city. While here you can choose to indulge in one of the more than 11,000 restaurants ranging from award-winning and upscale to memorable deli shops.

- Houston has a theater district second only to New York City with its concentration of seats in one geographic area. Located downtown, the 17-block theater district is home to eight performing arts organizations with more than 12,000 seats.

- Houston has a unique museum district offering a range of museums, galleries, art and cultural institutions, including the city's major museums.

- Houston has more than 500 cultural, visual and performing arts organizations, 90 of which are devoted to multicultural and minority arts and is one of five U.S. cities that offer year-round resident companies in all major performing arts.

- More than 90 languages are spoken throughout the Houston area; 92 countries have consular offices in Houston—the third highest in the nation.

- Houston has professional teams representing football, baseball, men's basketball, soccer and AHL hockey.

- Houston is home to the Houston Livestock Show and Rodeo—the world's largest livestock show and rodeo, which attracts more than 2.2 million visitors each year.

- Houston has one of the youngest populations in the nation. The city has the third-largest Hispanic and third-largest Mexican population in the U.S.

- Houston boasts more than 40 colleges, university and institutions - offering higher education options to suit all interests.

- Houston is home to the Texas Medical Center, the largest medical center in the world, with a local economic impact of $10 billion. More than 52,000 people work within its facilities, which encompass 21 million square feet. Altogether, 4.8 million patients visit the TMC annually.

- The Houston-Sugar Land-Baytown MSA's Gross Area Product (GAP) in 2006 was $325.5 billion, slightly larger than Austria's, Poland's or Saudi Arabia's Gross Domestic Product (GDP).

- When comparing Houston's economy to a national economy, only 21 countries other than the U.S. have a gross domestic product exceeding Houston's regional gross area product.

- Houston ranks second in employment growth rate and fourth in nominal employment growth among the 10 most populous metro areas in the U.S. In 2006, the Houston metropolitan area ranked first in Texas and third in the U.S. within the category of "Best Places for Business and Careers" by *Forbes* magazine.

- Home to more than 5,000 energy related firms, Houston is considered by many as the Energy Capital of the world.

- Houston's economy has a broad industrial base in the energy, aeronautics, and technology industries: only New York City is home to more Fortune 500 headquarters; 23 Fortune 500 companies are headquartered in Houston.

- Sixty-two of the world's 100 non-U.S. based corporations have a presence in Houston.

- The Port of Houston ranks first in the United States in international waterborne tonnage handled and second in total cargo tonnage handled. It is the tenth largest port in the world. The port handled 220 million short tons of domestic and foreign cargo in 2010.

Texas Medical Center (TMC) Facts & Figures

The Texas Medical Center (TMC) was launched more than 65 years ago with the dream to create a medical center where people from all walks of life could have access to the best health care.

As the largest medical complex in the world, the Texas Medical Center is an internationally recognized community of healing, learning and discovery. The Texas Medical Center in Houston is home to many of the nation's best hospitals, physicians, researchers, educational institutions and health care providers. Recognized by *U.S. News & World Report's Annual Survey of American's Best Hospitals*, the member institutions of the Texas Medical Center are known throughout the world for quality patient care, teaching, research and preventive medicine.

All of the member institutions are not-for-profits dedicated to the highest standards of patient care, research, and education. These institutions include 15 renowned hospitals and two specialty institutions, three medical schools, six nursing schools, and schools of dentistry, public health, biomedical informatics, pharmacy, and virtually all health-related careers. Two trauma facilities are located in the center, as are institutions specializing in every imaginable aspect of health care. The TMC is where one of the first—and still the largest—air ambulance services was created; a very successful inter-institutional transplant program was developed; and more heart surgeries are performed than anywhere else in the world.

The following are a few important statistics on the Texas Medical Center:

- Member Institutions: 54
  26 government agencies
  26 private not-for-profit, health-related institutions
- Annual Patient Visits: 7.1 million
  Annual International Patient Visits: 16,000
- Employees: 92,500
- Full-time Students: 34,000*
- Volunteers (Daily): 12,000
- Residents and Fellows: 4,000
- Visiting Scientists, Researchers and Students: 7,000**
- Total Hospital Beds: 6,900
- Babies Delivered (Annually): 28,000
- Total Bassinets: 400
- Annual Surgeries: 350,000
- Total Budget (All Institutions): $14 billion
- Total Size/Gross Square Foot (All Campuses)
  45.5 million sf
  1,300 Acres
  280 Buildings

*Student numbers only include those of programs of health-related member institutions.

**Includes data from 9 academic member institutions.

Updated to include 2010-2011 figures.

Noteworthy News

AMIA 10X10 Course Offering in Health Care Interface Design

HOUSTON – (June 12, 2013) – The University of Texas School of Biomedical Informatics at Houston is offering a course in health care interface design as a part of the AMIA 10x10 program. The course runs July 8 through September 20 and costs $2,195.

The AMIA 10x10 course is offered online and focuses on EHRs, human-computer interaction, human factors and Health IT usability. This on-line interactive course will allow students to master the fundamental principles and methods in health interface design; learn how to evaluate the usability of existing systems; and learn how to design new systems with built-in usability by applying related theories, principles, methodologies and techniques.

The course is intended for Health IT professionals, CIO's, CMIO's, system developers and programmers, researchers and informaticians, physicians, nurses, graduate students, postdoctoral fellows and other health care professionals. The registrant should have an educational background in health sciences, computer science, informatics or other related areas.

Jiajie Zhang, PhD, SBMI dean is the director of UTHealth School of Biomedical Informatics' AMIA 10X10 program. This 10x10 course is based on the health care interface design course that Zhang has taught at the University of Texas School of Biomedical Informatics at Houston for more than 14 years.

SBMI Welcomes New Faculty Members

HOUSTON – (June 3, 2013) – **Yanlong Sun, PhD**, joined SBMI on March 1, 2013 as an assistant professor of biomedical informatics. He came to SBMI in 2007 as a postdoctoral fellow and was promoted to research scientist in 2011. His research interests include cognitive psychology, decision-making, computational neuroscience and data visualization. He's currently conducting research on the project Integrated cognitive-neuroscience architectures for understanding sensemaking, supported by IARPA.

"My research interests are concentrated in higher-order human cognition, such as judgment and decision-making, probabilistic reasoning, neuroeconomics, spatial cognition, computational modeling and scientific thinking," said Sun. "One major topic in my research is human perception of randomness, an essential component in people's probabilistic reasoning and decision-making under uncertainty. Another research topic I have extensively studied is human spatial cognition.

"Specifically, I am interested in the interactions between the multiple representations of various reference systems."

Susan Fenton, PhD, RHIA, FAHIMA, joined SBMI on June 1, 2013 as an assistant professor of biomedical informatics. She came to SBMI from Texas State University in San Marcos, where she was an assistant professor and co-director of the Institute for Health Information Technology.

"I love to teach students the power of data, as well as how information technology can be implemented effectively to support operations." She will be co-teaching HIT 5327 Standards and Standards Development in Applied Health Informatics in the 2013 fall semester with SBMI assistant professor and applied master's program coordinator Julie Brixey, RN, MPH, PhD. Fenton will also be helping the school acquire health informatics and information management education accreditation from CAHIIM for the applied master's program.

Fenton's research interests include workforce development, data management, ICD-10 implementation and health care associated infections. Her interest in workforce development was limited to health IT professionals, but she sees a huge need to develop new methods for healthcare professionals to learn how to use information technology effectively.

Her work with the ICD-10 is limited because her research is focused on various impacts related to its implementation, which will no longer be relevant in a few years after implementation is complete.

As for health care associated infections, Fenton said, "Finally, for HAIs, I have a new project working with an industrial engineer who identifies failure points that result in HAIs. Obviously, if those [failure points] can be identified, then we need to determine the impact of that on EHRs and documentation. As always with health informatics, the opportunities are almost unlimited!"

Student Body Votes Assistant Professor As This Year's Distinguished Educator

HOUSTON – (May 9, 2013) – Trevor Cohen, MBChB, PhD, was awarded the 2012-2013 John P. McGovern Outstanding Teaching Award at The University of Texas School of Biomedical Informatics at Houston.

"My discussions with Dr. Cohen are always a scientific journey," One SBMI student said. "He guides students to find the solution or understand the question—lots of thinking, lots of learning, and at the end of the day, you feel very accomplished and proud of being a researcher or a 'geek'."

Cohen taught Foundations of Health Information Sciences II (HI 5311) in the Fall 2012 and Spring 2013 semesters, which is a required course for all students enrolled in the master of science and doctor of philosophy health informatics programs.

The course concerns ways in which information is processed by humans and machines, with an emphasis on the modeling of biomedical data using geometric, probabilistic and other approaches. Lecture material is combined with laboratory assignments that, whenever possible, leverage systems and datasets that are both publicly available and practically significant.

When accepting the award at yesterday's commencement ceremony, Cohen thanked the student body, his wife and his teachers over the years, mentioning clarity of expression and enthusiasm as two things that he strives to accomplish as an educator.

"I think about the excellent teachers that I've had when considering the qualities that I aspire to in teaching," said Cohen. "The two qualities that stand out to me are clarity of expression and enthusiasm in the subject being taught. With respect to clarity of expression, I think that some credit for this – if it manifested in my teaching – is due to my wife, Lauren, and to the students who, over the years, have helped me to understand if my articulations of the material are easily interpreted.

"As for enthusiasm, I think some credit goes to the teachers that I've had who've instilled their enthusiasm for this subject and for teaching. Also, credit is due to the students who I've interacted with at SBMI because enthusiasm does not exist in a vacuum. Without the brave students who've taken their time, trouble and effort to grapple with this material with great enthusiasm, I don't think that quality would have manifested in my teaching either."

The John P. McGovern Outstanding Teacher Award is presented annually to a faculty member who provides information and substantially contributes to students' ability to think critically. The recipient must cultivate student confidence in the roles for which they are being educated, while stimulating their further quest for knowledge and ongoing professional development.

The SBMI student body nominated five faculty members for the award this year, including Trevor Cohen, MBChB, PhD; Amy Franklin, PhD; Yang Gong, MD, PhD; M. Sriram Iyengar, PhD; and Hongbin Wang, PhD.
In submitting their nominations, students were asked to explain how the faculty member demonstrated deep knowledge of their area of expertise, sustained enthusiasm for teaching, continued interest in understanding students, responded quickly to student questions and encouraged independent thinking.

School of Biomedical Informatics Announces Its Inaugural Distinguished Alum

HOUSTON – (May 9, 2013) – John C. Frenzel, MD, MS, a 2002 graduate of SBMI's Master of Science in health informatics program, is the first recipient of Distinguished Alum Award.

New SBMI alumni association president, Muhammad Walji, PhD, Director of Informatics at the School of Dentistry, introduced Frenzel at the school's commencement on Wednesday, May 8.

"This year marks the very first Distinguished Alum Award accorded by the school," Walji said. "The individual selected for this honor is well known in the field—locally and nationally—and has served SBMI, his employer, and informatics and other professional organizations well. I am very proud to call to the stage the inspirational Dr. John C. Frenzel, who is recognized today with the 2013 Distinguished Alum Award."

Prior to earning his informatics degree from SBMI, Frenzel received bachelor's degrees in chemistry and biology from Emory University and a medical degree from Baylor College of Medicine. Frenzel currently serves as the Chief Medical Information Officer at The University of Texas MD Anderson Cancer Center, where he also serves as a professor of Anesthesiology and Perioperative Medicine.

When accepting the award, Frenzel focused his remarks on the 2013 graduates and the impact they will make in health care. He also referenced the challenges medicine faces today, like the need for safety, quality of care, efficiency and effectiveness—all of which will be addressed and solved not through medicine, though it plays a role, but through information technology and the work of informaticians.

"I'd like to thank the faculty, staff, students and my fellow alumni for this honor," said Frenzel. "In thinking about what I was going to say today, I began to look at how medicine has changed. It's at an inflection point—a point where folks with training around IT can make an inordinate difference in advancing medicine.

"When you look to your future and you look forward to the opportunities that present themselves, remember that the things you do can influence patient care, not just…where you work, not just [in] our nation, but [in] the world."

As CMIO at MD Anderson, Frenzel has the responsibility to provide patients, providers and researchers access to information and tools to further their understanding of cancer and its treatment. He leads a team responsible for a comprehensive reporting environment that supports operational and research queries and lends his expertise as part of the leadership team that will onboard MD Anderson's newly announced off-the-shelf EHR. In addition, he is an adjunct professor of biomedical informatics at SBMI.

In his final comments to the graduates, Frenzel said, "This is a time when information technology can and will change patients' lives, and the things that you've dedicated your lives to, at this point, are going to be critical in making that happen. I salute you, and I ask that you live fiercely, work hard and understand that what you do incredibly matters."

SBMI Alumnus Receives New Investigator Award

HOUSTON - (May 3, 2013) - Ashish Joshi, MD, PhD, who received his doctoral degree from SBMI in August of 2012, was honored at the April 30 ceremony as one of the 16 researchers for the University of Nebraska Medical Center's 2012 Scientist Laureate, Distinguished Scientist and New Investigator Awards.

Joshi works as an assistant professor at the Center for Global Health and Development and the Department of Health Services Research Administration in UNMC's College of Public Health. His research focuses on designing and developing innovative, accessible and affordable heath technologies to improve access, alleviate health literacy, reduce health disparities and enhance population outcomes among individuals living in diverse global settings.

"My research aims to use innovative informatics approaches to translate research into practice for improving population outcomes," Joshi said.

He utilizes information and communication technologies such as Internet, cell phone and electronic health kiosks to prevent and manage the increasing disease burden among individuals living in urban and resource-poor settings, focusing on lifestyle diseases like obesity, diabetes and hypertension. By combining interactive media such as audio, video, images and animations with public health evidence, Joshi develops informatics tools that can effectively communicate risk to individuals in an easy-to-understand format so that appropriate recommendations can be given.

School of Biomedical Informatics Dean Says Job Prospects are Bright for Grads

HOUSTON - (May 1, 2013) - With job postings in health information technology tripling in as many years, UTHealth School of Biomedical Informatics is the place to be. The school's new dean, Jiajie Zhang, PhD, delivered the good news during his state of the school address to a gathering of faculty, staff and students last month.

Founded in 1997 and the only informatics school in the Lone Star state, the school is training the people who will play a major role in the nation's efforts to expand electronic health record systems designed to enhance quality and reduce cost.

As for research, students are involved in initiatives to make e-health records more user friendly and are working on ways to mine existing data to improve patient care.

The latter is called "Big Data" and you will be hearing a lot about it in years to come, Zhang said.

"There is an information explosion going on," said Zhang, first holder of the Dr. Doris L. Ross Professorship. "Ninety two percent of the world's data was created in the last two years."

The school's data miners include Hua Xu, PhD, who is taking a new approach to drug development. Rather than shepherd a drug from the bench to bedside, which may take years and millions of dollars, he is poring through data to see if there may be other uses for approved drugs.

Zhang said data has been likened to oil and there are similarities. They are both valuable but they have to be refined to be of use. If that is the case, the school may be about to strike a gusher.

Student Interprofessional Team Wins H-GEC Contest
SBMI Master's Student Among Them

HOUSTON - (April 25, 2013) - The "Forget-Me-Nots," a 10-member team of students from The University of Texas Health Science Center at Houston (UTHealth), the University of Houston and Texas Woman's University, won first place at the 2013 Geriatric Interprofessional Student Competition Monday night.

Their mentor was UT School of Dentistry Professor Donna Warren-Morris, RDH, MEd, of the Department of Periodontics and Dental Hygiene. The annual event is sponsored by the Houston Geriatric Education Center at UTHealth, with support from UTHealth Vice President Charles Figari of Auxiliary Enterprises.

The winning team included UTHealth students Gwendolyn Brobbey, MD, MPH, (biomedical informatics), Deep Pujara (public health) and Erika Wood, MPH, (medicine); as well as TWU students Gregory Brusola (physical therapy), Leslie Melton and Julia Rhodes (occupational therapy); and UH students Antonia Caliboso, Sarah Grudier and Kathleen Lanini (social work) and Solange Inzillo, (communication science and disorders).

This year, 55 students competing in five teams took on the challenge of performing a needs assessment in assigned communities in Houston to evaluate potential success of establishing a "Memory Café" in those areas. The Forget-Me-Nots evaluated Houston's Third Ward and identified Wheeler Avenue Baptist Church as a potential site for a Memory Café.

A Memory Café is a variation on a traditional support group, offering people with early to moderate dementia,

Alzheimer's or other memory problems a place to gather — along with their caregivers — to meet others in similar situations. The concept was pioneered by a psychiatrist, Dr. Bere Meisen, in The Netherlands in 1997.
Two students from the School of Biomedical Informatics served on teams in the competition, including above mentioned Gwendolyn Brobbey and Anna Xu, PhD student.

About the Houston Geriatric Education Center:
The Houston Geriatric Education Center (H-GEC) is one of 45 Geriatric Education Centers in the United States. The overarching goal of the H-GEC is to reduce health disparities, address causes of vulnerability, and meet the social and healthcare needs of older Americans, which requires responsible, consumer-friendly, interprofessional teams of health professionals who are experts with experience in elder care. Health care professionals are required to support public policies that are based on sound ethical principles and beneficial to vulnerable elders.

About the competition:
The 2013 Geriatric Interprofessional Student Team Competition was comprised of five teams encompassing 55 students from biomedical informatics, communication sciences and disorders, dental hygiene, dentistry, health and human performance, medicine, nursing, occupational therapy, pharmacy, physical therapy, public health and social work, representing The University of Texas Health Science Center at Houston, Texas Woman's University and the University of Houston.

Grants Awarded to SBMI Faculty: April 2013

Integration and Analysis of Medical Data for Important Acute Diseases
Noriaki Aoki, MD, PhD, SBMI associate professor, received a grant through the CHORD- J Consortium as the project leader to develop an information management system that will integrate data from prehospital, acute care and inpatient care, which will be used for further decision making in the regional emergency care PDSA (Plan-Do-Study-Act) cycle.

Real-time Disambiguation of Abbreviations in Clinical Notes
Hua Xu, PhD, new SBMI associate professor, had a NIH grant transferred from Vanderbilt University, which proposes to develop informatics methods to automatically detect abbreviations and their possible meanings from large clinical text and to disambiguate abbreviations that have multiple meanings. The project will also integrate those methods with clinical documentation systems so abbreviations can be expanded in real-time when physicians enter clinical notes.

Bridging Genomics and Medicine by Ontology Fingerprints
Jim Zheng, PhD, new SBMI associate professor, had a NIH grant transferred from the Medical University of South Carolina, which proposes to develop an ontology fingerprint-derived gene network to study human disease. These studies will link genomic information to clinical concepts and translate biomedical literature and genomic information into clinical practice by employing ontology fingerprints to decipher the interplay and reversal of obesity, diabetes and hepatic steatosis after GBS. Bridging the gap between genomics and medicine by ontology fingerprints will enhance the delivery of clinical care to patients.

An Insilico Method for Epidemiological Studies Using Electronic Medical Records
Hua Xu, PhD, new SBMI associate professor, had a NIH/NCI grant transferred from Vanderbilt University, which proposes to develop an automated informatics approach to extract both fine-grained cancer findings and general clinical information from electronic medical records and use them to conduct cancer related epidemiological studies.

Lex Frieden Receives Disability Achievement Award

HOUSTON - (March 14, 2013) - Lex Frieden, a disability rights champion at UTHealth and TIRR Memorial Hermann, received a 2013 Henry Viscardi Achievement Award. The award honors the accomplishments of people with disabilities on a global basis.

Best known for his contributions to the landmark Americans with Disabilities Act of 1990, Frieden suffered a spinal cord injury while in college and has used a wheelchair for more than 40 years. He is a professor at the UTHealth School of Biomedical Informatics and directs the Independent Living Research Utilization program at TIRR Memorial Hermann.

The award was one of nine presented by The Viscardi Center, an internationally recognized center for training and rehabilitation of people with disabilities. It bears the name of the late Henry Viscardi, Jr., who was one of the world's leading advocates for people with disabilities.

The announcement of the awards coincides with the 80th anniversary of the inauguration of President Franklin D. Roosevelt, who as a member of the disability community was among the most influential figures of the 20th century and who was advised by Viscardi. Viscardi wore prosthetic legs and died in 2004.

"I am proud to join The Viscardi Center and my fellow committee members in announcing this outstanding group of Henry Viscardi Achievement Award recipients," said former U.S. Sen. Robert Dole, Selection Committee co-chair. "All of them are champions for people with disabilities around the world. In turn, their work, and the stories of their lives, are important and set the bar high for the next generation of innovators, activists and leaders."

The other committee co-chairs included: Marlee Matlin, an Academy Award-winning actress who received critical acclaim for "Children of a Lesser God;" and Luis Gallegos, an Ecuadorian diplomat.

Other recipients include: Laurie Ahern, president, Disability Rights International, Washington, D.C.; Rosangela Berman Bieler, Senior Advisor on Children with Disabilities, UNICEF, New York City; Tony Coelho, former U.S. Representative from California; Yoav Kraiem, chairman, National Council for Community Relations – Mental Health, Israel; U.S. Rep. James R. Langevin, Rhode Island's 2nd Congressional District; Kathleen Martinez, assistant secretary, U.S. Department of Labor, Washington, D.C.; Patrick D. Rummerfield, community liaison, International Center for Spinal Cord Injury, Kennedy-Krieger Institute, Chesterfield, MO; and Michael Ashley Stein, executive director, Harvard Law School Project on Disability.

New Associate Dean for Research Named for SBMI

HOUSTON - (March 1, 2013) - Elmer Bernstam, MD, MSE, professor at The University of Texas Health Science Center at Houston (UTHealth) School of Biomedical Informatics is the new associate dean for research.

"Dr. Bernstam is not only an established independent researcher who has excellent track records in funding and publications but also a collaborative researcher who has led large-scale projects across schools and institutions," said Jiajie Zhang, PhD, SBMI dean and the former SBMI associate dean for research. "He is a nationally recognized leader in translational and research informatics. As a practicing physician, Dr. Bernstam is highly familiar with the health care challenges that require informatics solutions, and he is well positioned to help our efforts in applied informatics in clinical operations."

Bernstam's goals to improve research at SBMI include internal and external synergy. One goal is to have school researchers from different focus areas collaborate more often. For example, one group at SBMI is merging clinical informatics with natural language processing to better understand clinical documents like electronic health records. These distinct areas of expertise can be leveraged across multiple biomedical informatics areas.

Secondly, Bernstam would like to increase collaboration with other centers in the Texas Medical Center. One specific center that he mentioned was the MD Anderson Institute for Personalized Cancer Therapy.

"The IPCT has multiple challenges that can be addressed by biomedical informatics research," said Bernstam. "One question they may ask is: What drug therapy should be given to patients based on their molecular profile? This question poses significant informatics challenges including bioinformatics, information retrieval, knowledge representation, user interface design and others.

"Centers such as these could benefit from a collaborative relationship with the school. SBMI, in turn, will benefit from addressing 'driving biological problems' posed by clinical and biological researchers."

Bernstam started with the school as an assistant professor in 2001 and quickly moved up the ranks to become a professor in 2010. He received his medical degree from The University of Michigan Medical School in 1995 and finished an internal medicine residency in 1998, followed by a Master's in Computer Engineering from The University of Michigan and a National Library of Medicine fellowship in biomedical informatics at Stanford in 2001.

His research focuses on biomedical information retrieval, consumer informatics, decision support and translational biomedical informatics. Bernstam has served as principal investigator on grants from The National Library of Medicine, The Robert Wood Johnson Foundation and NASA. He also serves as the Director of Informatics for the UTHealth Center for Clinical and Translational Science.

"My lab is focused on making sense of clinical data. We created and maintain the UTHealth clinical data warehouse, which contains clinical data for more than 400,000 patients," said Bernstam. "Using the clinical data for research is challenging, but we are working on ways to identify patients with specific conditions, who received particular treatments or had outcomes of interest.

"The warehouse has been particularly useful to SBMI faculty and researchers outside of the school who need access to the data for their research or during the grant-writing process."

Bernstam also plans to expand bioinformatics research—informatics applied to biological data—at SBMI. He hopes the arrival of new faculty member Jim Zheng, PhD, and adjunct faculty member Jeff Chang will fuel new bioinformatics research at the school.

"We need to focus on a few key areas where we have strengths or where we can realize opportunities," said Bernstam. "The dean has identified strong areas of research that SBMI will expand, including clinical/translational informatics, cognitive informatics and applied clinical informatics. From the research perspective, these are very synergistic.

"For instance, work in applied clinical informatics can help us get access to clinical data and clinical systems that will be useful for research."

Zhang, who served as the associate dean for research from 2002-2012, is excited to see what the future brings for SBMI's research efforts.

"Biomedical informatics and health information technology are driving a revolution in health care with the potential to change the game of biomedical discovery and greatly increase quality of care, patient safety and efficient care delivery," said Zhang. "A major responsibility of the associate dean for research is to lead the school's effort in identifying and seizing emerging opportunities in basic research funding and informatics applications. I am confident that Dr. Bernstam will lead the school's research enterprise to the next level."

Jiajie Zhang, PhD, Named Dean for UTHealth School of Biomedical Informatics

HOUSTON - (February 19, 2012) - Jiajie Zhang, PhD, the Dr. Doris L. Ross Professor at the UTHealth School of Biomedical Informatics, will be appointed dean of the school effective March 1, UTHealth President Giuseppe N. Colasurdo, MD announced today.

"Dr. Zhang is a leader in his field and has helped to advance the academic mission and expand the research enterprise at the School of Biomedical Informatics," Colasurdo said. "Though relatively young, the UTHealth School of Biomedical Informatics already has firmly established its reputation for innovation and achievement. I am confident that Dr. Zhang's leadership will facilitate the school's advancement to the next level."

The announcement comes after the recent completion of a national search.

Zhang, an accomplished educator, administrator and investigator, has served as interim dean since April 1, 2012, succeeding Jack Smith, MD, PhD, who served as dean of the UTHealth School of Biomedical Informatics for nearly seven years. In his role as dean, Zhang will lead the only school-level informatics program in the nation entirely dedicated to biomedical and health informatics.

George M. Stancel, PhD, executive vice president for academic and research affairs, said, "Not only has Dr. Zhang had a major impact within the School of Biomedical Informatics, but he has also contributed significantly to the other UTHealth schools, the UT System and national programs in the broad area of informatics. His own work has brought recognition to UTHealth and the School of Biomedical Informatics in the informatics community, and I am looking forward to working with him in his role as dean."

Zhang became a member of the UTHealth faculty in 1998 and served as the associate dean for research at the School of Biomedical Informatics from 2002 to 2012. As a scientist, he has spent the past two decades conducting research in biomedical informatics, cognitive science, human-centered computing, medical decision making and information visualization. He is the principal investigator and director of the National Center for Cognitive Informatics and Decision Making in Health care and a 2002 recipient of the John P. McGovern Outstanding Teacher Award.

"Biomedical and health informatics is a rapidly growing field," Zhang said. "Health information technology is one of the few industries that has grown at a double-digit rate, even during a severe recession. There's a huge and rapidly increasing demand for what we do.

"In response to that demand, we will continue to aggressively grow enrollment for the school's certificate and master's programs and expand doctoral and post-doctoral training for future academicians and researchers," Zhang said.

During his time as the interim dean, Zhang has led the school's curriculum redesign efforts to meet the emerging needs of students. The curriculum changes focus on the needs of doctoral-level biomedical researchers in healthcare quality and safety and big data analytics as well as master's and certificate-level health IT workers who facilitate electronic health records adoption.

Zhang has also hired several new faculty members to reinforce the school's expertise in natural language processing, bioinformatics and patient safety. He said he plans to add more faculty members over the next few years. Under Zhang's leadership and with support from the president's office, the school has completed its space consolidation plans to improve communication and collaboration.

"We're at the forefront of a transformational era in our field, and I'm grateful for the opportunity to serve with such talented, dedicated team members," Zhang said. "I look forward to working with the students, faculty, staff, collaborators and donors as we continue to advance the school's mission."

SBMI Alumnus and Faculty Receive $3.9M NIH Grant
to Fund Dental 'Adverse-event' Database

HOUSTON - (Feb. 5, 2013) - Most visits to the dentist have positive outcomes – but with millions of patients visiting thousands of practitioners each year – complications and adverse events are bound to occur.

"Identifying the adverse events most commonly affecting patients is a first step toward preventing them," said Muhammad Walji, PhD, UTHealth School of Biomedical Informatics alumnus and Director of Informatics at The University of Texas School of Dentistry at Houston.

That's why Walji and colleagues at the Harvard School of Dental Medicine, including Associate Professor Elisbeth Kalendarian, DDS, MPH and Instructor Rachel Ramoni, DMD, are leading a new project to better understand and document patient safety issues by mining millions of electronic dental patient records and building a database of such events that can be used to improve patient safety.

To fund the project, Walji and his team received a $3.9 million, five-year grant from the National Institute of Dental and Craniofacial Research, a division of the National Institutes of Health.

Other members of his team include School of Dentistry Professor and Director of Quality Assurance Veronique Delattre, DDS; SBMI Professor and Interim Dean Jiajie Zhang, PhD, and Associate Professor Amy Franklin, PhD, also of SBMI. Other academic partners, such as dentistry schools at the University of California at San Francisco and Oregon Health and Science University, as well as a group of dental providers throughout the country, are also participating.

"Dentistry can learn from the patient safety and quality assurance improvements underway in medicine intended to reduce medical errors," Walji said. "People are concerned about the quality of dental care, and we are pleased that through this grant we can begin gathering information for analysis."

In the September 2012 issue of the *Journal of the American Dental Association*, Walji and others co-authored a guest editorial calling for dentistry to undertake a comprehensive initiative to improve patient safety, beginning with

collecting data on the most pressing safety risks.

"This collection of dental schools and private practitioners will give the researchers access to potentially millions of dental records," Walji said.

First, the team will need to devise a working definition of "adverse events" and criteria for which incidents qualify. This would include those considered as unforeseen complications caused by treatment.

Then, researchers must develop triggers – such as multiple visits in a short period – that will electronically flag patient records most likely to contain adverse events. Identifying information will be scrubbed so that patient privacy is not compromised.

The project's aim is twofold: to create a framework for classifying and documenting adverse events in dentistry, and also to build a searchable data repository of such events.

"Having such a database will allow researchers to pinpoint incident patterns, identify underlying causes and improve patient safety," Walji said.

Newest SBMI Doctoral Candidate

HOUSTON - (Dec. 20, 2012) - Congratulations to Sahiti Myneni, who recently passed her doctoral candidacy exam. Myneni's research interests include the development of mobile and digital health technologies. She uses methods from cognitive science, natural language processing and social network analysis to understand user needs and behavior. She is also involved in the translational engineering of scalable health interventions (in terms of software and hardware) for public health and wellness.

Myneni pursued her Masters in Electrical Engineering at Arizona State University and earned her undergraduate degree from Osmania University, India (BS Electronics and Communication Engineering).

Her doctoral proposal is entitled, "Attributing meaning to online social network analysis for tailored socio-behavioral support systems."

Unhealthy behaviors increase individual health risks and are a socioeconomic burden. Harnessing social influence is perceived as fundamental for interventions that seek to influence health-related behaviors. However, the phenomena through which social influence occurs are poorly understood.

Online social networks provide the opportunity to understand these mechanisms as they digitally archive communication between members.

The proposed research presents a methodology for content-based social network analysis, combining qualitative coding, automated text analysis and formal two-mode network analysis. This combinational approach will be applied to characterize the communication between members of QuitNet, an online social network for smoking cessation. Further analysis will be done to develop socio-behavioral interventions that can be implemented in real-time at the individual and population levels.

Cerner AES Electronic Health Record Added in Curriculum

HOUSTON – (Nov. 21, 2012) - The UTHealth School of Biomedical Informatics is pleased to announce that Cerner's Academic Solution (AES) Electronic Health Record will be integrated into the course curriculum beginning in January 2013. Students will have the opportunity to gain hands-on experience with an EHR that is used in many healthcare organizations across the U.S. SBMI faculty received training on November 19 to become more familiar with the features and functionalities of AES.

Additionally, SBMI is in the planning stage of creating a virtual EHR laboratory. Using a virtual approach, students will remotely access selected EHRs using the Internet. Students will gain real-world experience with EHRs through simulations that will be used to complete course assignments. SBMI is committed to providing students with the latest in EHR technologies.