The vision of the Department of Biomedical Informatics and Medical Education is to realize the potential for information to improve biomedicine, health and education. The Department is engaged in training, research, and the practice of biomedical informatics and medical education across the breadth of health sciences and health care.
Founded in 1861 by a private gift of 10 acres in what is now the heart of downtown Seattle, the University of Washington is one of the oldest public universities on the West Coast. Anyone can enjoy and be enriched by all the UW has to offer, including world-class libraries, art, music, drama, sports and the highest quality medical care in Washington state.

The University of Washington

The University of Washington is preparing leaders of change and promoters of ideas, and we are developing a culture of collaboration. We are ranked number one among public universities nationally to receive federal research and training funds, and since 1975 has been in the top five for public and private universities. For FY 2012, we received $1.471 billion in sponsored research funds, tripling our research funding over the last 20 years.

Our Vision

The vision of the Department of Biomedical Informatics and Medical Education (BIME) is to realize the potential for information to improve biomedicine, health and education. The Department is engaged in training, research, and the practice of biomedical informatics and medical education across the breadth of health sciences and health care. BIME consists of 27 core faculty, 66 extended faculty who work closely with 13 staff. Our core and extended faculty have appointments in 27 departments across UW. There is a very active research program with faculty and students at any point in time typically involved with over 100 research grants. Faculty play key practice roles in research and clinical computing and in medical education and evaluation.

Our Program

UW's Biomedical and Health Informatics program is a nationally renowned program that stresses the synergy between teaching, research, and practice. Our Graduate Program (partially funded by an NLM training grant) offers a full-time research focused Master's program, Ph.D. program, Postdoctoral fellowships and a Summer Undergraduate Research Program that prepares students for careers in research, teaching and information management in academia and within health care organizations and the health care computing industry. In collaboration with UW’s School of Nursing, a distance learning Master's program in Clinical Informatics and Patient-Centered Technology (CIPCT) is offered for health care professionals. Planning is underway for a clinical informatics fellowship leading to board certification to begin in July, 2014.

Our Research

The current portfolio of research in the Department is extremely diverse and crosses a broad range of disciplines in many departments and schools at the University. Our research broadly focuses using biomedical information to improve health and education. Members of our faculty, our graduate students, and our postdoctoral fellows have opportunities for collaboration in almost every discipline. Faculty and student research interests range from foundational to applied and some faculty take their applied work and put it into practice in our clinical computing and research computing environments. Foundational research in the Department includes: data modeling, data management, data visualization, data security/privacy, data integration, knowledge
representation and ontologies, computable knowledge resources, information design, inference, modeling uncertainty in data and knowledge, information workflow, people and organizational issue, observational/fieldwork methodologies, natural language processing, text mining. Application areas range from translational bioinformatics, to clinical research informatics to clinical informatics including consumer health informatics and to population or public health informatics. Many research projects and even more faculty and students bridge foundational and applied research.

At the heart of a cluster of our research projects are electronic health records, in their myriad forms and contexts including derivative data warehouses. These projects focus on both the front end of electronic health records (e.g., collection and management of health information) and on the back end (e.g., manipulation and mining of “big data” to extract health information at the population level and secondary use of electronic health data subject to appropriate oversight and approval processes. Opportunities for applied research that can be put into practice are also available since several members of our faculty are key players in the day-to-day operations of the clinical computing systems of UW Medicine.

In one of our larger projects in the area of translational bioinformatics/clinical research informatics we are in the near-final stages of a multi-year effort to create a biospecimen acquisition system whereby individuals receiving medical treatment will have the option to assent to donate the de-identified residual samples of their routine blood and tissue samples for use by researchers linked to de-identified information about the medical conditions the patient has and medications the patient is using. The goal is to overcome the challenge of biospecimen acquisition by providing simple access to samples donated by patients. Faculty and students are also very active in applying informatics tools to discovery and delivery of care in the area of Genomic Medicine.

Other examples of informatics research include: a) the use of models and simulations to identify the most effective responses to emerging diseases and infections; b) improvements in medical care and in the delivery of medical information through the use of electronic devices (e.g., cell phones); c) the use of devices and monitoring applications to improve care and quality of life for older adults; d) the use of semantic annotation of the physical dynamics of biological processes to merge models from different sources; e) machine interpretation of medical imaging as a basis for medical decisions; f) development of reliable computerized assessment of medical records collected in hospital and clinical settings; g) machine translation to improve public health delivery, h) informatics tools to improve global health.

Visit us at bhi.washington.edu/bime
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