



# Biomedical Informatics

Website: <https://informatics.wustl.edu/>

## Research

**Joanna Abraham, PhD** (<https://i2db.wustl.edu/people/joanna-abraham-phd-fcmi-famia/>), is focused on improving collaborative practices in health care using principles and techniques from informatics to promote patient safety, quality and care continuity.

**Research interests:** handoffs, care transitions, care coordination, decision making, health IT, medical errors, mixed methods, systematic reviews, evidence synthesis

**Chih-Hung Chang, PhD** (<https://i2db.wustl.edu/people/chih-hung-chang-phd/>), is focused on the integration of methodology and technology to advance clinical care, research and education.

**Research interests:** item response theory, Rasch measurement, computerized adaptive testing, psychometrics, informatics, smart testing and smart learning, health-related quality of life, patient-reported outcomes, clinical outcomes, shared decision making, quality improvement

**Randi Foraker, PhD** (<https://i2db.wustl.edu/people/randi-foraker-phd-ma-faha-famia-facmi/>), is focused on applying epidemiology and informatics techniques to solve problems in the population health domain.

**Research interests:** approaches for the integration of socioeconomic and patient-reported outcome data with electronic health record data; interventional approaches to the use of electronic health records in order to address modifiable risk factors for disease and enable patient-centered decision making; study design methodology and data analysis

**Thomas Kannampallil, PhD** (<https://i2db.wustl.edu/people/thomas-kannampallil-phd-famia/>), is focused on integrating cognitive, behavioral and computational informatics techniques to develop health information technology solutions in the areas of clinical decision support, clinical reasoning and clinical workflow.

**Research interests:** clinical decision support applications for tracking, monitoring and evaluating electronic health record-based activities such as medication/lab orders, decision-making for chronic care, and opioid management; tracking and analysis of medical errors in a variety of situations (e.g., medication orders, transitions of care, clinical decision-making) and evaluating their impact on clinical outcomes and patient safety; use of cognitive and human factors approaches for identifying behavioral, collaborative and workflow challenges in the design and use of health information technology

**Albert M. Lai, PhD** (<https://i2db.wustl.edu/people/albert-lai/>), is focused on applying computer science and informatics techniques to solve problems in the clinical domain.

**Research interests:** clinical research informatics, clinical informatics, consumer health informatics, telemedicine, usability, natural language processing, mobile health

**Fuhai Li, PhD** (<https://i2db.wustl.edu/people/fuhai-li-phd/>), is focused on applying statistical, machine learning, deep learning and data mining approaches to diverse biomedical dataset integration and interpretation to solve the challenges of bioinformatics, systems biology and image informatics.

**Research interests:** integrative large-scale pharmacogenomics analysis for target, signaling network, drug and drug combination discovery; genomics data driven tumor-stromal communication discovery and modeling

**Philip R.O. Payne, PhD, FACMI** (<https://i2db.wustl.edu/people/philip-r-o-payne-phd-facmi-famia-faimbe-fiahsi/>), is the founding director of I<sup>2</sup> at Washington University in St. Louis, where he also serves as the Robert J. Terry Professor and Professor of Computer Science and Engineering. Previously, Dr. Payne was Professor and Chair of the Department of Biomedical Informatics at The Ohio State University.

**Research interests:** knowledge-based approaches to the discovery and analysis of biomolecular and clinical phenotypes and the ensuing identification of precision diagnostic and therapeutic strategies in cancer; interventional approaches to the use of electronic health records in order to address modifiable risk factors for disease and enable patient-centered decision making; the study of human factors and workflow issues surrounding the optimal use of health care information technology

**Po-Yin Yen, PhD, RN** (<https://i2db.wustl.edu/people/po-yin-yen-phd-rn-facmi-famia-faan/>), is focused on applied clinical informatics research to support clinicians adapting to health information technology.

**Research interests:** clinical informatics, usability, technology acceptance, human-computer interaction, literature mining, data visualization, workflow analysis, time motion study