HEALTH SCIENCES INFORMATICS, MS

Overview

Health sciences informatics research involves investigating a range of topics: innovations in the health sciences (e.g., clinical, nursing, public health, and librarianship); understanding information needs; designing and creating information technologies; deploying information solutions; and evaluating information management systems. With the ubiquitous deployment of EHRs and other health information systems in the 2020's, health sciences informatics research also encompasses the application and evaluation of analytic platforms for precision medicine and population health.

The approach at Johns Hopkins is interdisciplinary. Although housed in the School of Medicine, the training program partners with all schools in the health sciences and throughout Hopkins. During rotations and thesis work, MSc Research students will have the opportunity to learn about and/or research topics like the following:

- Clinical Decision Support
- Global Health Informatics
- Health Information Exchange (HIE)
- Human Computer Interaction
- Multi-Center Real World Data
- Patient Quality & Safety
- Population Health Analytics
- Precision Medicine Analytics
- Standard Terminologies
- Telemedicine
- Translational Bioinformatics

The MSc Research program invites applicants from a range of disciplines including public health, clinical care, nursing, and biology, as well as from cognate fields such as computer, library, and information sciences.

Admission Criteria

Applicants with the following degrees and qualifications will be considered:

- BA or BS, with demonstrated technical and mathematical & statistical proficiency;
- BA or BS, and a minimum of three years of professional experience in a relevant field where technical and mathematical & statistical proficiencies were obtained; or
- MA, MS, MPH, MLIS, MD, PhD, or other relevant terminal degree where technical and mathematical & statistical proficiencies were obtained or applied

Relevant fields include public health, medicine, dentistry, veterinary science, nursing, ancillary therapies, librarianship, biomedical science, and computer and information science.

The application is made available online through Johns Hopkins School of Medicine's website (https://www.hopkinsmedicine.org/som/education-programs/graduate-programs/admissions/). The supporting documents listed below must be uploaded and tracked in the SLATE application system.

- Curriculum Vitae (including any peer-reviewed publications or conference presentations)
- Three letters of recommendation
- Official transcript of school record
- Certification of terminal degree
- Evidence of basic English language proficiency

You may also submit a portfolio of published research, writing samples, or samples of website or system development projects to support your application.

NOTES:

1. "*Technical proficiency*" in this context refers to the ability to work with computers and information systems to solve problems or accomplish tasks beyond word processing, order-entry, etc. Familiarity with at least one programming language is strongly preferred.
2. "*Mathematical & statistical proficiencies*" in this context involves the application of math or statistics to real-word problems or research. While evidence of applying these proficiencies within a professional or work setting would be considered ideal for an applicant, college-level course work in math and statistics will suffice.
3. "Basic *English proficiency*" is a consideration for admissions because of the collaborative nature of academic research.

If you have questions about your qualifications for this program, please contact JHInformatics@jhu.edu

Program Requirements

The Master of Health Science Informatics Research degree is completed over 24 months of full-time enrollment and includes research and thesis preparation. The curriculum will be customized based on the student's background and needs, in partnership with the student's advisor and the MSc Program Director.

Year 1 of the curriculum will be focused on laying a solid foundation of research and quantitative methods and exposing students to a range of application areas through rotations and electives.

Year 2 of the curriculum will be focused on undertaking a research-based thesis under the direction of a faculty advisor. During Year 2 students will likely need to take advanced electives related to their thesis research. These advanced electives might focus on specific methods that may need to be applied or specific clinical, public health, or informatics topic areas that are the focus of the research.

Year 1

- Informatics Research Methods (4 course sequence)
- Quantitative Methods (2-4 course sequence of biostatistics, probability, or epidemiology)
- Electives
- Research Rotations & Research Seminar
- Student Seminar
- Research Ethics

Year 2

- Thesis Research
- Advanced Electives
- Student Seminar

- Exhibit knowledge in the scope and process of the biomedical informatics discipline across different levels (e.g., biological, patient-centered, health system)
- Select and apply appropriate research designs for biomedical informatics projects.
- Develop technical competencies for applying quantitative methods in analyzing common clinical data sources (e.g., electronic health records, hospital discharge data).
- Exhibit knowledge of biomedical informatics policies and guidelines (e.g., ethical, privacy, security) intended to improve outcomes among all patients.
- Demonstrate the ability to produce and share scholarly evidence (e.g., conference presentations, peer-reviewed publications).