Real-World Evidence in Healthcare and Life Sciences, MS

Overview

The Master of Science in Real-World Evidence (RWE) is an interdisciplinary, flexible, and contemporary degree that focuses on best practices for the appropriate acquisition and analysis of observational health data. Housed in the Department of Health Sciences and the Roux Institute, learners explore how observational research produces a comprehensive understanding of disease, including experience with appropriate methods and software to conduct this research.

RWE#is the clinical evidence regarding the usage and potential benefits, or risks, of a medical product derived from analysis of real-world data (RWD). RWE can be generated by different study designs or analyses, including but not limited to randomized trials, pragmatic trials, and observational studies. RWDare the data relating to patient health status and/or the delivery of healthcare routinely collected from a variety of sources, for example, electronic health records, claims, and billing activities.

RWD and RWE are playing an increasing role in healthcare decisions. The FDA uses RWD and RWE to monitor postmarket safety and to make regulatory decisions. The healthcare community uses these data to support coverage decisions and to develop guidelines and decision support tools for clinical practice. Medical product developers use RWD and RWE to support clinical trial designs and observational studies to generate innovative, new treatment approaches.

This program is based on open, reproducible science—including the use of common data models and open-source analytics software to codify these practices into consistent, transparent, reproducible solutions—and applies these tools and practices to answer clinical questions by generating evidence to guide healthcare policy and improve patient outcomes.

The program seeks to educate two key professionals: analysts and researchers.

An analyst is a technician (e.g., solution architect, epidemiologist, data scientist, etc.) who is engaging in RWE studies by utilizing statistical tools and epidemiologic methods to operationalize and analyze RWD. Technicians may be carrying out activities on behalf of an institution or may be working as individuals interested in the technology that RWD offers. They may be involved in any stage of the RWD/RWE continuum (extract-transform-load [ETL]/data quality processes, tool enablement and self-service analytics, visualization, communication) and are often interested in extending these resources to serve additional use cases or new functionality.

A researcher is one who originates from any number of backgrounds (statistics, clinical training, public health, biological sciences, data science, etc.) who engages in the RWD community for the sake of designing and conducting a research study. Researchers want to know how to run their own observational research studies. In their day, researchers were often responsible for translating the science into better decisions and better care.

The intent of this program is to curate interdisciplinary expertise to support the evidence-generation process in the pharmacoepidemiology research community. The curriculum aims to ensure that learners can obtain in-demand skills that are immediately deployable in roles at pharmaceutical companies, regulatory authorities, health systems, technology companies, and consulting groups specializing in life sciences and healthcare.

Please visit Bouvé College Learning Outcomes for the specific student learning outcomes for this program.

Program Requirements

- Concentrations and course offerings may vary by campus and/or by program modality. Please consult with your advisor or admissions coach for the course availability each term at your campus or within your program modality.
- Certain options within the program may be *required* at certain campuses or for certain program modalities. Please consult with your advisor or admissions coach for requirements at your campus or for your program modality.

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
HSCI 5130	Introduction to Real-World Evidence	2
HSCI 5140	Foundations of Data Models	2
HSCI 5150	Methods for Observational Research 1	3
HSCI 5151	Methods for Observational Research 2	3
HSCI 5160	Standardization of Real-World Data	2
HSCI 5170	Data Model Transformation	2

PHSC 5212	Research Skills and Ethics	2
Capstone Requirement		
HSCI 6980	Real-World Evidence Capstone	3

Selectives

Code	Title	Hours
Complete a minimum of 6 semester hours from the following:		6-12
HSCI 5180	Phenotyping	
HSCI 5190	Cohort Building	
HSCI 6110	Advanced Population Characterization	
HSCI 6120	Advanced Population Estimation	
HSCI 6130	Advanced Patient Prediction	

Electives

Code	Title	Hours
Complete up to 6 semester hours from the following (electives are selected in consultation with the program director):		6
HINF 5300	Personal Health Interface Design and Development	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6220	Database Design, Access, Modeling, and Security	
HINF 6355	Interoperability Key Standards in Health Informatics	

Program Credit/GPA Requirements

31 total semester hours required

Minimum 3.000 GPA required