BIOSTATISTICS (PHD)

Overview

This program will prepare you for advanced study and research in biostatistics. It's a great fit for students with a strong background in mathematics and statistics who are interested in working in health care and biological settings. As a student in this program, you'll function as an independent investigator or co-investigator with researchers in other areas, taking the lead in designing studies and analyses. Our faculty (https://coloradosph.cuanschutz.edu/education/departments/biostatistics-informatics/directory/) are studying the analysis of longitudinal data, clinical trials, statistical methods in genetics and genomics, causal modeling, treatment of missing data and imputation, image analysis, functional data analysis, and data visualization, which means you can find the mentor who's right for you.

If you have an MS in Biostatistics or a related field, this program can be completed in three to four years. Typically, you'll spend the first one to two years devoted to coursework and the later years on research and your dissertation. Research and dissertation work involves developing, comparing, and evaluating statistical methods (e.g. methods for analyzing data), typically motivated by an application in healthcare or biology.

Curriculum

Code	Title	Hours
Required MS Biostatistics Courses (20 credits)		
BIOS 6618	Advanced Biostatistical Methods I	4
BIOS 6619	Advanced Biostatistical Methods II	4
BIOS 6621	Statistical Consulting	2
BIOS 6624	Advanced Statistical Methods and Analysis	4
BIOS 6631	Statistical Theory I	4
BIOS 6632	Statistical Theory II	4
BIOS 6643	Analysis of Longitudinal Data	3
Required Public Health Courses (6 credits)		
PUBH 6600	Foundations in Public Health	2
EHOH 6601	Public Health Concepts for Non-MPH	1
EPID 6630	Epidemiology	3
MS Elective Courses (6 credits from the following courses):		
BIOS 6641	Causal Inference	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6646	Survival Analysis	3
BIOS 6655	Statistical Methods for Genetic Association Studies	3
Required PhD Biostatistics Courses (6 credits)		
BIOS 7731	Advanced Mathematical Statistics I	3
BIOS 7732	Theory/Algorithms Data Science	3
PhD Electives (9 credits from the following courses):		
BIOS 7659	Statistical Methods in Genomics	3
BIOS 7719	Information Visualization	3
BIOS 7722	Model Selection	2
BIOS 7747	Machine Learning for Biomedical Applications	3
Elective Health Sciences Courses (3 credits)		**3**
Dissertation (30 credits)		
BIOS 8990	Doctoral Thesis	1-10
Total Hours		**85**