Data Science Track – BMS Program

The data science tract in the Biomedical Sciences Program aims to develop PhD-level scientists with expertise in handling large and complex datasets to solve real-world biomedical challenges. The curriculum is interdisciplinary drawing from the biological sciences, statistics, and computer science departments.

Required Coursework (21 credits)
1. Computational Biology (3 credits)
2. Epidemiology (3 credits)
3. Research Ethics (3 credits)
4. Graduate level Physiology Course (3 credits)
5. Developmental and Molecular Cell Biology MOLB 5670 (3 credits)
6. Regression Analysis STAT 5015 (3 credits)
7. Database Systems COSC 5820 (3 credits)

Recommended program electives (9 credits)
1. Data mining (BOT 5550 or COSC 5010)
2. Bayesian Data Analysis or Markov Chains or Principles of Stochastic Modeling (STAT 5380 or MATH 5290 or MATH 5490)
3. Statistical Methods 1 (STAT 5210)
4. Statistical Methods 2 (STAT 5220)
5. Computational Statistics (STAT 5660)
6. Interdisciplinary Seminar in Biomedical Sciences (1 to 3 credits)

Note: only one course associated with the same number below counts – ex. student taking STAT 5380 and MATH 5490 would only fulfill 3 credit hours of electives but student taking STAT 5380 and STAT 5300 would fulfill 6 credit hours.

Year Three
1. Capstone Project
2. Research

Year Four and beyond
1. Research toward dissertation completion
2. Completed dissertation and defense