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## BIOMEDICAL DATA SCIENCE, PHD

## LEARNING OUTCOMES

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- 1. Articulate the biological context of a research question and the scientific relevance of analysis results.
- 2. Communicate with scientific and quantitative (computational and statistical) colleagues about data analysis goals, methods, and results.
- Extract the statistical or computational problems from a scientific problem. Develop, characterize, and implement suitable analysis methods to answer questions from biomedical data. Evaluate the validity of analysis methods.
- Analyze data; extract knowledge and guide decisions based on biomedical data. Organize data and software so that quantitative analyses are meaningful and reproducible.
- 5. Critically evaluate quantitative approaches in the scientific literature.
- 6. Evaluate and develop study designs and recognize limitations and potential biases in research data sets.
- 7. Identify the ethical and regulatory issues surrounding a research project.
- 8. As part of a biological, biomedical or population health investigative team, serve as the leader in the area of rigorous computational and statistical investigation.