

Donald Bren School of Information and Computer Sciences
Statistics M.S./Ph.D.

Core Knowledge. Students will be able to:

- Demonstrate understanding of the theory of probability and statistics
- Demonstrate understanding of a spectrum of modern statistical methodology
- Implement statistical methodology using statistical packages
- Demonstrate ability to integrate theory and methods for a more complete understanding of statistics. (The left hand is theory, which when combined with the right hand, methodology, allows the practitioner to perform with considerable advantage over another practitioner with one hand tied behind their back.)

Data Analysis. Students will be able to demonstrate:

- Ability to use appropriate methodology for analyzing data
- Ability to understand the scientific problem being addressed in a statistical analysis
Ability to interpret the statistical analysis of scientific data
- Substantial understanding of the “art of data analysis”
- An understanding of the ethical issues surrounding the collection, analysis and interpretation of data

Communication (Plays a key role in conjunction with data analysis). Students will be able to:

- Write a report that describes the scientific problem under study, gives a logical coherent description of how an appropriate statistical analysis was performed, and gives an understandable interpretation of a statistical analysis
- Give a coherent explanation of the results of a statistical analysis to a non-statistician
- Interact with scientists who have presented a scientific scenario, possibly with data they have collected or with the concept of how data will be collected, and to work with the scientists to develop a plan for data analysis and/or collection
- PhD students: Write scientific papers for the statistical literature and for the scientific literature of specific projects/collaborative efforts
- PhD students: Give understandable technical talks to audiences of peers
- PhD students: Give understandable talks that present results of sophisticated data analyses to general and/or non-technical audiences