

PHYSICS DEPARTMENT
COLLEGE OF ARTS AND SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: 03/01/2018

PROJECT TITLE: Applications of Machine Learning in High Energy Physics

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Project Description

The student will work with an experimental high energy physics (particle physics) group that is developing machine learning algorithms
• to replace the most computationally expensive parts of the event pattern recognition;

• to increase the performance of the event-classification algorithms; and
• to reduce the number of bytes persisted per event without degrading the physics performance.

The student should have significant Python programming experience, be comfortable with multidimensional calculus, and have some college-level experience with probability and statistics. Knowledge of physics at the level of the freshmen-level calculus-based course will be useful, but is not necessary.