AEROSPACE ENGINEERING AND ENGINEERING MECHANICS
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

FOR APPLICATION YEAR: 2021

PROJECT TITLE: Exploring Opportunities and Challenges in Intelligent Autonomous Systems

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Project Description

Scientists living in the Information Age have an unprecedented amount of real-time information at our fingertips. The challenge driving our collaboration is to leverage the technological breakthroughs of this century, specifically Artificial Intelligence (AI), to support resilient context-sensitive decision making in military/commercial collaborative network of airborne systems. The potential impact of AI driven aerial platforms is immense. Assured Autonomy through the advancement of AI technology for dynamic systems remains one of the most impactful technological challenges to be addressed to enable the vision of flexible, fast, cost-effective, and safe flight operations. It has characteristics of dynamic real-time environments integrated with strategic goals, safety assurance, certification, and strong interaction with humans as fleet operators.

The WISE project will involve a survey of the promise, potential and impact of intelligent autonomous systems with an emphasis on the importance of “assured autonomy”. Additionally, a MATLAB based simulation model with be provided to introduce the student to effective approaches on a simplified yet relevant benchmark. This research requires basic MATLAB programming skills coupled with aerospace engineering applications.