Motivation
- Because of Warfighter demand, the DoD’s investment is increasing tenfold in unmanned aircraft systems (UASs) this decade. However, cross-platform coordination is lacking, and cost & schedule growth are concerns.
- Industry uses modular product architectures to manage product families to increase market share, increase economic order quantities and shorten time to market. Models are developed for these purposes.
- The DoD focuses on delivering a capability for the best value. Models for using modularity in this purpose have not been developed. These models could improve cost, schedule and performance of acquisition programs.
- This research will characterize the benefits of a modular architecture strategy to acquire UASs.

Research Questions
- How much value can be gained by adopting a modular strategy to acquire UASs?
- What functional mission capabilities are found in military UASs and are common to multiple systems?
- How are functional capabilities embodied in UASs?
- What functional capabilities should be common to UASs?
- Where does commonality and modularity exist and where do opportunities exist to increase modularity and commonality?

Research Approach
- Develop functional and physical models of UASs to a module level
- Identify modules that perform a mission capability
- Construct models to show how systems map to mission capability
- Identify best opportunities for commonality in UAS architectures

Expected Contributions
Expand theory: Develop platform concepts for government organizations and products (Government products deliver a capability vice seeking profit)
Methods: Develop, modify, and apply modularity concepts – concepts usually developed for profit ventures – to government applications