Abstract
In 2006 the Air Force Research Laboratory (AFRL) began a systems engineering activity to define the capability and technology trade space for the next generation system to replace the MQ-9 Reaper (the armed Predator drone). This process mirrored the Department of Defense's (DoD) Joint Capabilities Integration Development System (JCIDS) AFRL's studies are used in the actual JCIDS process for MQ-X. The AFRL studies found that a larger, faster, more capable aircraft was required; they also found that defining the aircraft was one of the easier challenges for system development. The major challenge for the next generation of systems is in the information required to operate the system. The information demands of current and future Air Force missions require new ways of looking at aircraft design - sensor payloads often are most important. Sensor, aircraft, fleet, and information requirements have to be studied simultaneously to ensure adequate system performance within cost objectives. A Close Air Support problem is presented as an example to demonstrate this concept. The second part of the talk focuses on the fundamental transformation in how we fight wars given the different capabilities of remotely managed systems.

Biography
Jason Bowman (B.S. AAE, Purdue in 1994; M.S. AAE Purdue, 1999) is a Senior Engineer in the Air Vehicles Directorate at the U.S. Air Force Research Laboratory (AFRL) at Wright-Patterson AFB, Ohio. His experience includes aircraft design for signature control and morphing aircraft. He has been at AFRL since 1999. From 2001 until 2006 he was a prime contributor to the DARPA/Department of Defense morphing aircraft program and a key contributor to developing and defining mission effective geometry changes.

In 2006, Mr. Bowman began work on the Next Generation Unmanned Aircraft System effort. This effort is a systems engineering activity to define and develop a technology portfolio for the next generation of aircraft systems in the MQ-9 armed Predator airplane development. Mr. Bowman authored extensive portions of the MQ-X Initial Capabilities Document, the first key document in the life cycle of an acquisition program. He is currently developing future mission architectures for Close Air Support and working with DARPA to develop next generation Joint Terminal Attack Controller (formerly Forward Aircraft Controller) equipment and architectures.

An informal coffee & cookie reception will be held prior to the lecture at 2:30 p.m. in the AAE/ARMS undergraduate lounge (directly in front of ARMS 3rd floor elevators)