Objective
Develop a methodology for structural design (including prestress) of MAV wings (via aeroelastic tailoring) for optimal flight performance

Research Plan
• Low-order, parametric representation of three possible MAV wing concepts
• Structural analysis & sensitivities
• Coupling with kinematic/aerodynamic model & propagation of sensitivities
• Understanding the significance of aeroelastic tailoring at a system-level

Team
Eric Stewart (Graduate Student)
Patil and Canfield (Advisors)
? (VT/WSU Collaborators)
? (AFRL Collaborators)
? (Industry Collaborators)

Timeline
• Year 1: Structural analysis of plate wing
• Year 2: Aeroelastic tailoring
• Year 3: Edge-stiffened membrane wing analysis and design
• Year 4: System-level design
• Year 5: Biomimetic wing design