**Background**
- Increased aerodynamic efficiency & stability
- More fuel efficient, reducing fuel consumption
- Creating stable 3-D bodies
- Using a morphing wing design
- Eliminate discontinuous surfaces
- 1:0 Tensile Members
- Tensility

**Goals and Objectives**
Design, manufacture, and test a morphing wing

**Winter quarter**
- Optimize internal mechanism in CAD to achieve desired twisting
- Determine lift and drag forces of various airfoil shapes at different angles of attack and twisting angles
- Integrate structural wing with selected airfoil shape
- Purchase materials to create an initial wing prototype
- Establish a plan for fabrication plan

**Requirements**
- Capable of maintaining **optimal aerodynamic efficiency** by twisting individual airfoils to adjust for changes in lift and drag
- **No discontinuities** present on the surface of the wing
- The morphing wing and the inner tensegrity mechanism combined would be **lighter than traditional wing design**

**Current Status**
- NACA 2415 at -10 twisting angle

**Team**
- **Advisor:** Edwin A. Peraza Hernandez
- **Team Lead:** Oscar A. Verdugo

**Subteams**
- **Structures**
  - Kajohn Aguilar
  - Joel Venegas
  - Kimberly Martinez
  - Ian Gonzales
  - Jesus Cervantes

- **Fluids**
  - Ali Haroon
  - Nicholas Federizo-Jimenez
  - Linda Chea
  - Raphael Feliciano
  - Friedrich Zurawaka

**Bigger Picture**
- Reduced material cost and lighter aircraft
- Successful implementation of a morphing wing
- Reduced environmental impact as less pollutants are emitted
- Can revolutionize air travel in all industries.

**Upcoming Objectives**
**Spring Quarter**
- Continue using CFD simulations to test for aerodynamic properties
- Preliminary prototype fabrication
- Learn how to use UCI wind tunnel and prepare fabricated sample
- Gather wind tunnel data of lift and drag forces on the prototype
- Fabricate full wing prototype, including the tensegrity mechanism

**Budget**
- Total Costs $315.13
  - Spar, $15.96, 5%
  - Airfoils, $155.92, 50%
  - Wires, $143.25, 45%