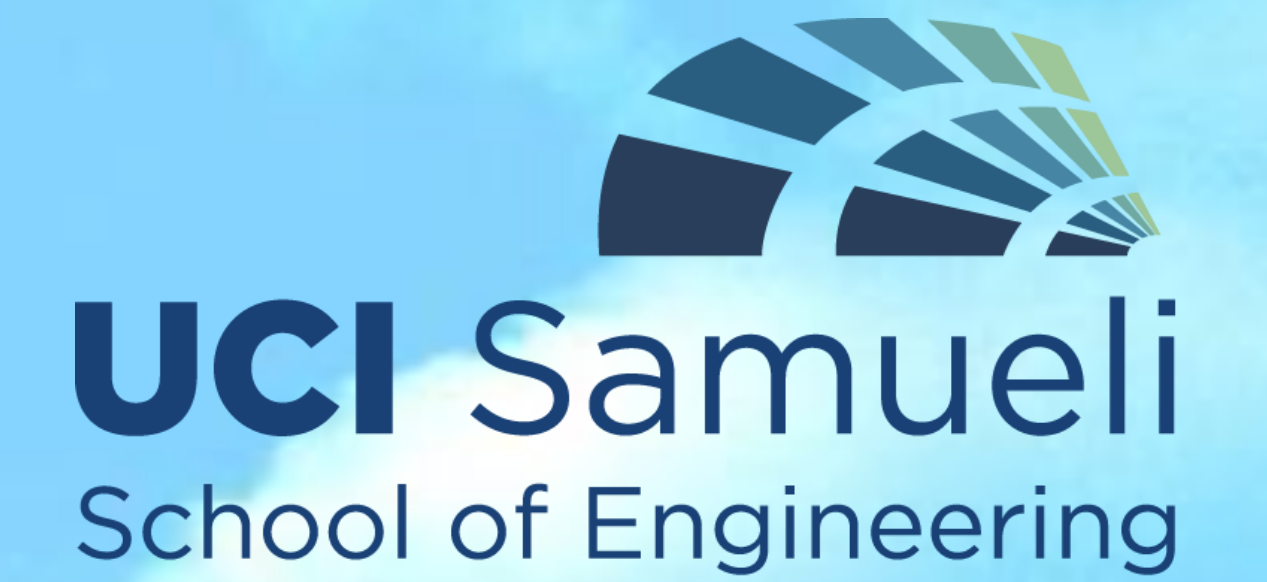




Flapping Wing Micro Air Vehicle

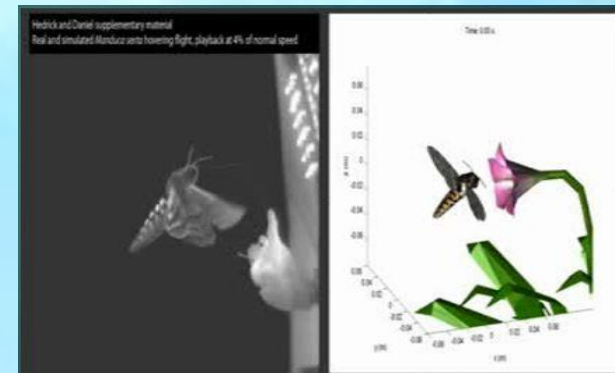
Advisor: Haithem Taha



Background

FWMAV is a research that focuses on bringing the flight dynamic in birds and insects into the air vehicles. These miniature vehicles are used for indoor reconnaissance, surveillance, military purposes, and other applications.

The flapping insects or birds perform unconventional aerodynamic mechanism to generate high lift at low Reynolds number and also unconventional stabilization mechanism where they have to stabilize their bodies while flying to overcome disturbances.

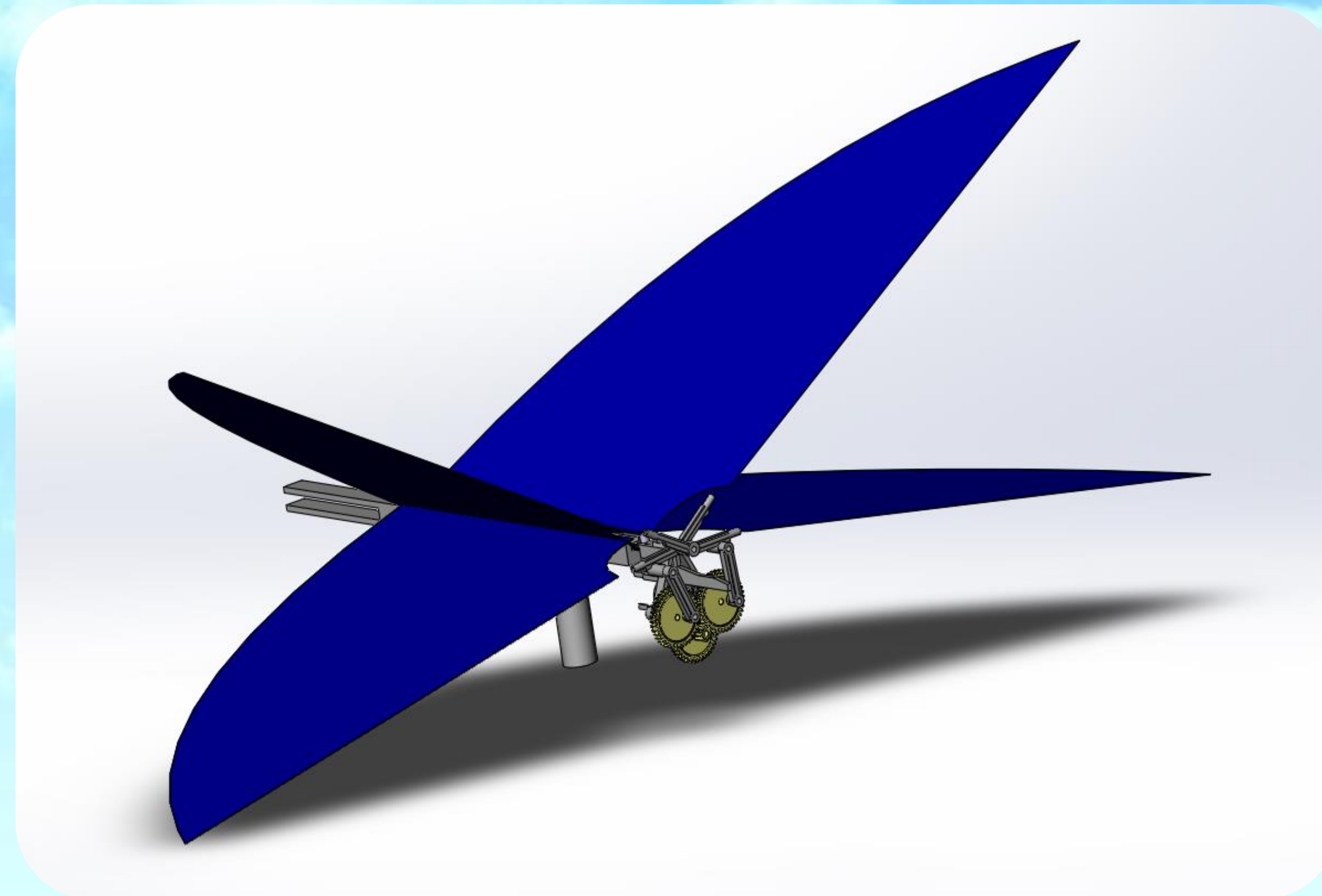
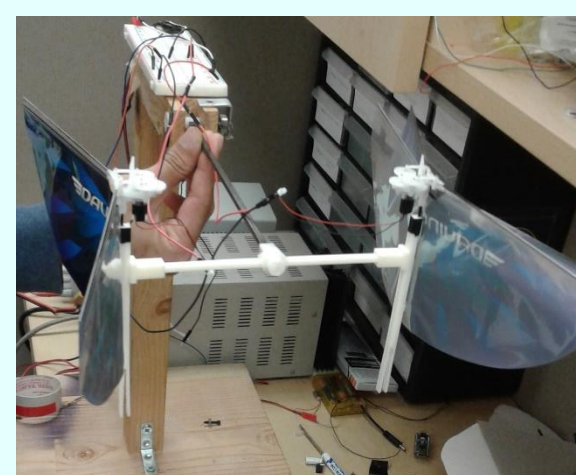
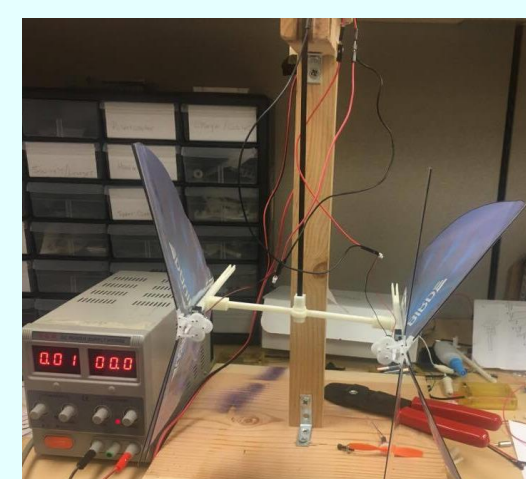
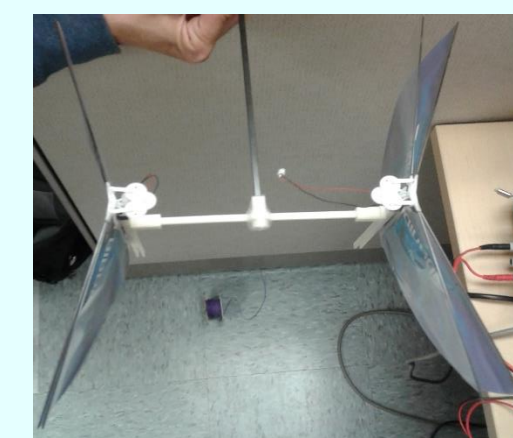


Goals

- Design, build, and fly the FWMAV that resembles the large insects.
- Experimentally verify and quantify the natural stability/vibrational stability of the FWMAV.
- To compare the flapping behavior with the behavior of a propeller.

Innovation

- 1 DOF rod attached to a pendulum.
- To see the stability of the birds, we disturb (pushing against the birds during operation) and observe whether the birds came back to its equilibrium state.



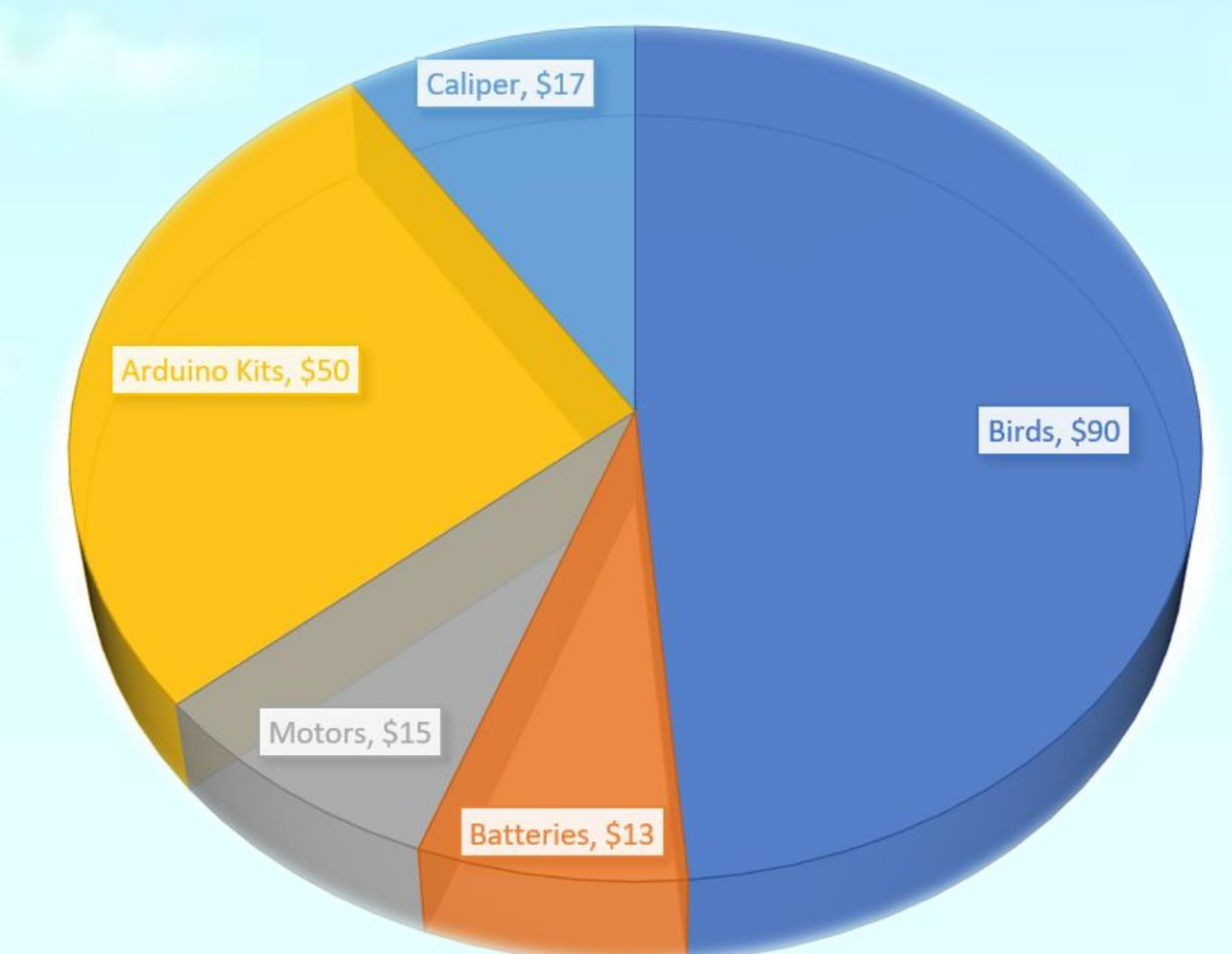
Next Steps

- Reduce weight
- Modify wings
- Obtain quantitative evidence

Requirements

- Light weight
- Less than 15 cm (6 inches) in length, width, or height
- Hover

Budget & Spending



Team Members

Team Lead: Kourosh Hedayatie
 Document Manager: Khue Pham
 Safety Officer: Joyce Lee
 Testing Lead: Tim Do
 Purchasing Manager: Ahmed Dessouky

