

# Flapping Wing Micro Air Vehicle

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## Background

As defined by the Defense Advanced Research Projects Agency (DARPA), a M.A.V is an aircraft that less than 15 cm or 6 inches in length, height, or width. These micro aircrafts are meant for reconnaissance and stealth surveillance. For this project we aim to design an aircraft that imitates the flight mechanics of an insect, having its wing flap horizontally. Like insects, the M.A.V will generate high lift at low Reynolds numbers. For the M.A.V Project, we aim to design, build, and fly a flapping wing micro air vehicle that is capable of hovering.

## Specifications

- Less than 15 cm in length, width, or height
- 1 minute hover time
- 2 DOF : Upward and Pitch

## Goals & Objectives

Objective 1 – Design a micro air vehicle

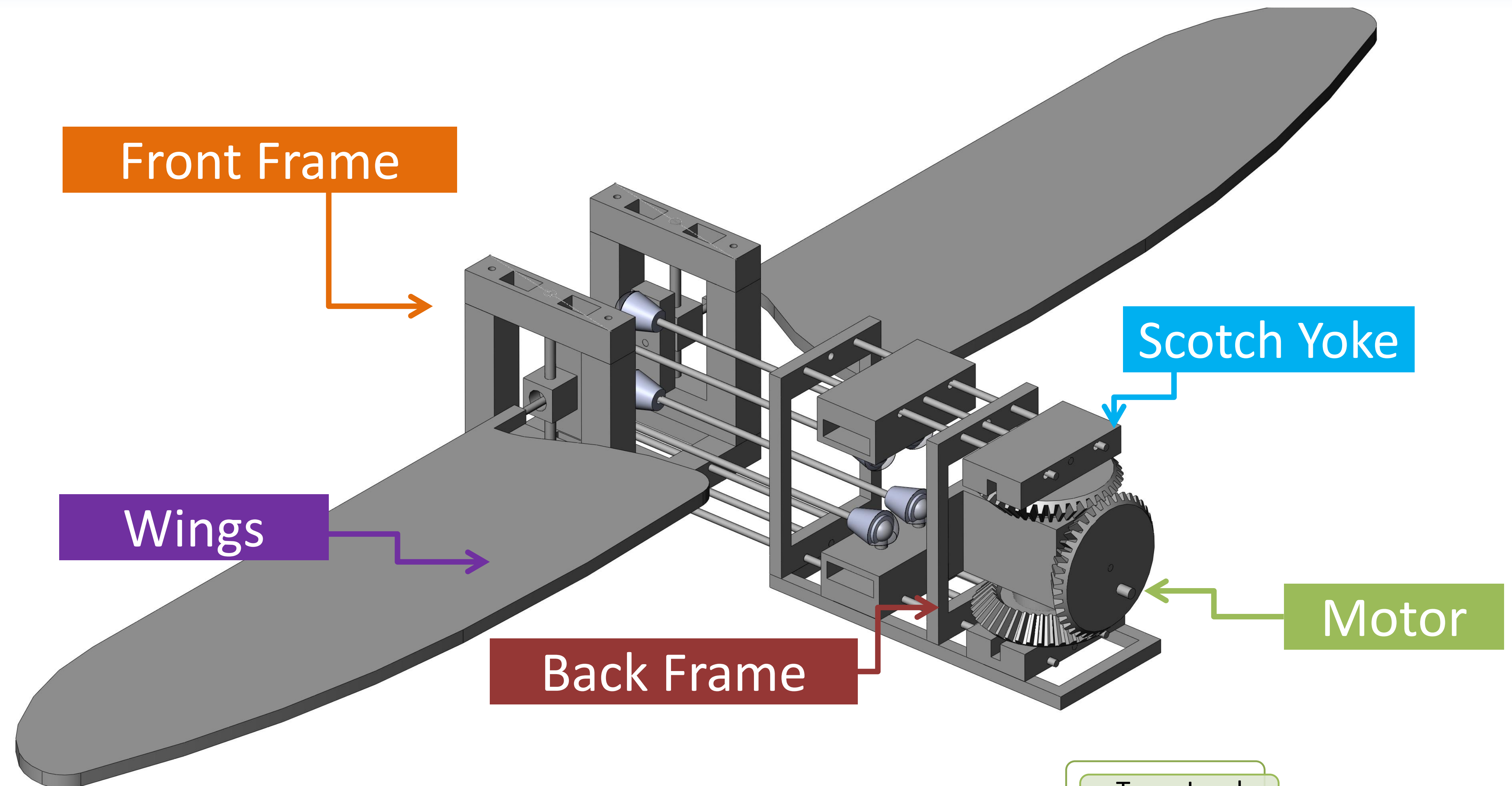
The design of the M.A.V will be an imitation of other researched M.A.V. We hope to be able to assemble one that works before branching off into new ideas.

Objective 2 – Achieve hovering

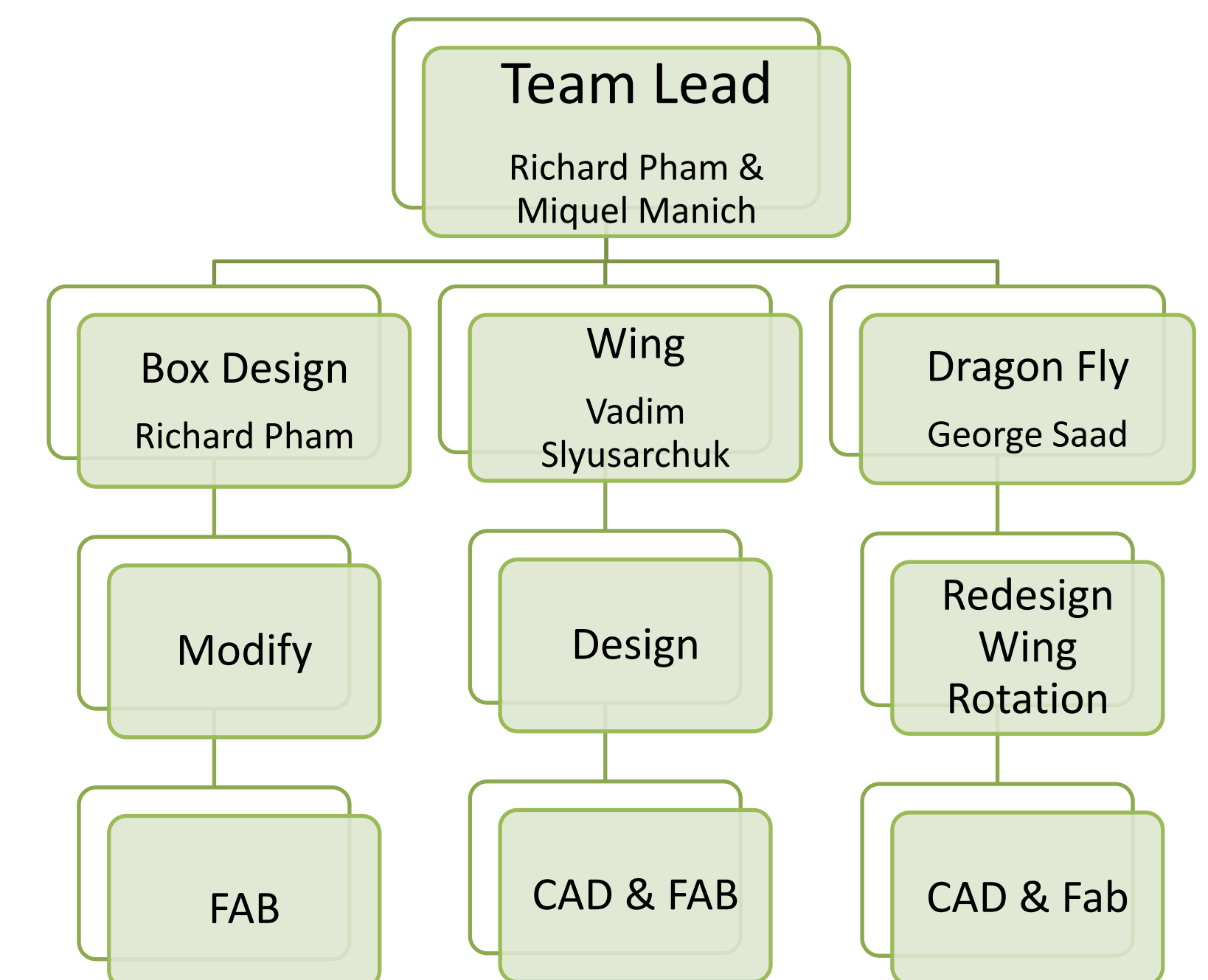
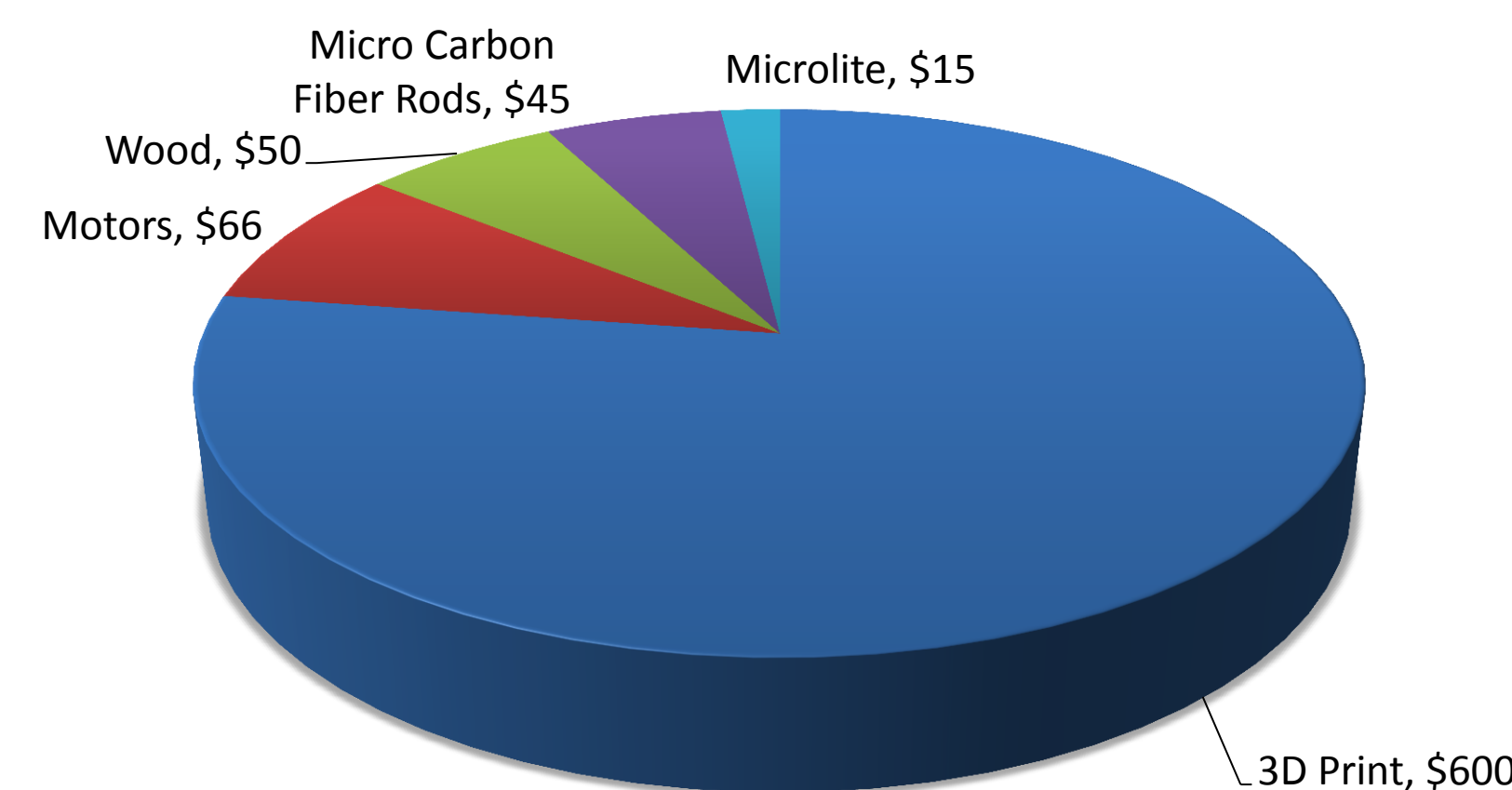
Since the M.A.V will be unstable and the slightest disturbance can knock it down, we will build a frame that guides the M.A.V in the vertical direction, allowing it only 1 D.O.F.

Objective 3 – Testing Pitch

We will build a frame that connects to the M.A.V that allows 2 D.O.F, pitching and upwards movement. With the restricted movements, we will be able to see the extent that the M.A.V pitches.



## 2015-2016 Budget & Spending



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