- Materials/3D printing suggestions
  - PLA - good material - brittle
  - PLA will work differently dependent on manufacturer ** Must find good manufacturer of the material w/ good filament
  - Orientation does matter – materials will snap between layers when load is applied
  - Polycarbonate has very strong layer bonding
  - Nylon is extremely strong but also flexible –good for parts where stiffness doesn't matter
  - MC Master Car (I believe was a manufacturer he mentioned for material)
  - SOME 3D PRINTING COMPANIES NAMED (unsure of spelling on all)
    - rep rep
    - mendle macs
    - CV CNC - delta printers
    - Lulz Bot ** This is the printer he really raved about. Insisted that you pay extra but for really great quality – best printer on the market in his opinion
    - DO NOT USE MAKER BOT
- Control Surfaces
  - prefers direct drive
  - has flown aircraft with little to no control surfaces
  - will need to come up with mechanism to wire motor to battery if we use rudders
- Battery
  - Run voltage as high as possible –allows most efficient way to power aircraft
  - Use power regulators to regulate power to components
  - One power regulator mentioned was BECS – very useful because it is reprogrammable
- Wing Design
  - suggested that wing should not be 3D printed
  - One idea: Carbon fiber spar, 3d printable rib, fabric covering
  - Another idea: Foam wing –carbon fiber as needed
- Motor/Props
  - Out runner motor
  - With our style of aircraft we should use big motor, big prop (overdo it if anything)
  - BIG speed controller (well above rated amp)
  - Some Brand Names mentioned:
    - Hacker if possible ** may have gone out of business
    - Neu Motor was another very good company named
  - Props:
    - Fixed Prop
    - Wooden props work well and are very light weight

    - Composite prop will last longer
    - Some Companies Named: Grochner, Aeronaut, Zinger, Top Flight

- Miscellaneous
    - Do not rule out hand-launch – as long as the aircrat is statically stable it should be able to be let go and fly on its own
    - the design should be driven by the payload – battery should be very last consideration.
    - For hand launch, low pitch prop
    - Minimize vibration in general but especially if using camera
    - Payload does not include anything needed to fly aircraft, so all motors should be taken out of payload calculation