## **SMITH Progress Report March**



- Testing requirements have been agreed upon and a test procedure is nearly completed for bench testing of all components of the SMITH 2011 and 2012 payload
- An entire testing system has been designed to allow for these tests and to optimize the system incorporated into the previous iteration of this experiment for at least twice the flow rate as required by the current proposal

## **Electrical:**

• Board design is being carried out at the requirements level for the new power board interface as well as several boards required for a system/bench testing system

## Mechanical:

- New engine mounts and mechanical systems have been designed and built to accommodate the larger engines (pumps) in the new payload
  - A shortened crankshaft will allow for the bigger engine to fit in the allotted space
- Mechanical design of the payload frame is in process to accommodate this system as well as optimize the mechanical setup of the previous experiment
- New options for the solenoid valves are being researched; noting that the higher the Cv number for the solenoid valve is the efficiency of flow is through the valve
- The larger Tigre Engine, pulled it apart and Dicronited (lubricated it).
- Threading the air intake port will allow for a custom barb fitting to secure an air tight fit
- The motor mount for testing is completed
  - A 6"x12"x1/4" aluminum plate will be used for testing, and the plumbing for the new filter assembly system will be determined and bought after the solenoid(s) come in.

## **Biological Analysis:**

- Preliminary culturing experiments are underway to attempt to optimize conditions for the recovery of airborne microorganisms
- Research is underway concerning the epiflourescent dyes to be used for the enumeration of the sample