***Design Idea 1:***

**Yeast in agar plates:**

We will use three separate plates to compare three different yeast strains. Each plate will be marked with a grid (to determine growth). The plates will be stabilized near each other on three separate walls of the ardulab. They will be covered with air exchange covers over the plate. The agar will be formulated to allow for slow growth aboard the ISS over the 30 day period.

*Yeast strains to be determined after class initial testing in October/November. Will be strain of brewing and/or baking yeast.*

*Agar to be formulated by Dr. Brian Stephens if necessary.*

**Temperature/Humidity Sensor:**

The temperature and humidity sensor will be placed the corner opposite the plates. Temperature and Humidity will be monitored and serve as comparative data for the experiment completed on Earth.

**Co2 sensor:**

Carbon dioxide sensor will be placed near the three middle plates. This sensor will collect data on Carbon dioxide gas being released during the process of cellular respiration. This will be one piece of data to monitor which can help determine if yeast growth continues. Any decrease could be an indication that one or more of the yeast strains has died.

**Light:**

A light will be placed in the ardulab to insure there is enough light to get a quality image from the camera for data collection. Light can’t be placed too close to the plates.

**Camera:**

The high definition camera will be installed in the corner opposite the two plates. A mirror will be placed alongside the single plate. The mirror will reflect the image of the two plates and the camera will capture the image of the single plate and the reflected image in the mirror. The high def camera will be used to insure quality of the image.