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## **Rotary Vegetation System and its Role in Reducing the Level of Air Pollutants**

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president in Japanese Culture Club, which is a recently established student organization at UAH, and the leadership that I have developed in the MAE 311 is used to organize the club members as well. The 3D CAD software operational skills that I have obtained in "MAE 111 - Introduction to Computational Tools" will be very powerful skills for modeling the rotary vegetation system. Also, I am pursuing an honors degree. Therefore, since I have the all required skills mentioned in the project proposal, I believe I am a great candidate for this project.

Proposal

## **Rotary Vegetation System and its role in reducing the level of air pollutants**

### **Project summary**

A rotary vegetation system is being designed this fall and will be ready to be tested for its ability in reducing the level of indoor air pollutants. Indoor air pollutants are emitted from almost all building materials, including paints, furnishings, tile, carpet, wood, and ... There are some health effects related to indoor air pollutants such as asthma, allergic reactions, adverse pregnancy outcomes, cancer, and etc. Previous studies shows that plants are known to have the capability to clean the air, however it is not clear how rotation of plants in different speeds can affect their function in cleaning the air.

### **Purpose**

The purpose of this project is to complete the rotary plant system and examine the effect of plant rotation in different speed on its ability in reducing the level of air pollutants including volatile organic compounds.

This project is seeking for a student who has some knowledge and experience in mechanical engineering and is pursuing an honors degree.

### **Learning objectives for the student (duties):**

1) The student will review the available literature and discuss published information in regard to rotary vegetation system, soil and watering system, lighting system, and volatile organic compounds that are eradicate from the vegetables

2) The student will learn about tumbler design and fabrication

3) The student will learn about assembling processor, power supplies, electrical hardware (transistor, wiring, resistors, and etc.), and constant monitoring of temperature and humidity.

5) The student will work in a laboratory to design a soil and watering system that can be used in the rotary vegetation plant system

6) The student will be in contact with NASA's scientists from Kennedy Space Center, FL and may have some phone conferences with them.

7) The student will be able to present the results of this study in a national conference.

### **Expected Results**

The expected results from this project are to complete an ongoing rotary vegetation system and test the soil and watering system in the laboratory within the standard expectation of 10-12 weeks (approximately 32-40 hours per week)

### **Supervision**

Mentor will supervise and interact with the student 1-2 time a week and will facilitate the student's access to the literature and conferences. In addition, the mentor will connect the student with NASA's scientists.