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Jan. 14, 2013

**Re: Support for ACAMP Senior Design Project**

Dear College 8 Review Committee,

I am writing to recommend support for the ACAMP (Automated Care and Monitoring of Plants) project that is being designed and constructed by the team of Justin Johnson, Stark Pister, Weyland He and Danny Gunny. This project has all the qualities of a very relevant, useful and challenging project. The team has undertaken this project in the EE 129ABC Capstone Design class. The Electrical Engineering Dept. supports the project by providing instructors, laboratory space, specialized equipment, but not monetary support. There are no department funds for this purpose. The ACAMP team estimates costs to be about $1550 and are seeking funding from multiple sources. I hope you will agree that this project merits strong support from College 8.

The objective of the ACAMP project is to develop a self-contained, sustainable system capable of growing many plants effectively while collecting pertinent data that a user is able to monitor via a web interface. Users will be able to control the environment of the plant, allowing for the adjustment of temperature, humidity, nutrient level, pH level, light level, and light duration. A laser scanning system will create a rough sketch of the plant’s surroundings. All the information can be accessed on-line by the user – very helpful for remote operation. The technical challenges of the project are both mechanical and CE/EE related. The irrigation system sensors will need to be carefully selected and integrated with a data and control system to assure the correct conditions for plant growth and nurturing. The team is working with mentoring by the class instructors, Stephen Petersen and myself.

We see a large variety of applications for this system from maintaining healthy plants for owners of exotic or vulnerable plants to rehabilitating valuable plants that are suffering from lack of proper care to experimental use in studying plant growth and decay under specified conditions. One example would be to see how currently viable plants react to the environmental changes driven by the global climate change now underway.

The Preliminary Design Review for the project was held last quarter and this initial review received a grade of A-. I can very strongly recommend this team for funding to support this interesting, challenging and significant project. This project will provide valuable technical expertise to the students as well as team project experience. It should also discover some practical aspects of autonomous irrigation based entirely on a sophisticated sensor suite.

Yours sincerely,



John F. Vesecky, IEEE Fellow

Professor and Founding Chairman