Research Progress/Timeline

Task	Status/ Expected Completion Date
Objective 1: Apply our DNA nanobarcode system to detect a panel of common plant pathogens with high sensitivity and specificity. (Oct. 2011 – Sept. 2012)	
Design and validate probe sequences	Completed
Prepare DNA nanostructures with capture probes	Completed
Demonstrate detection of model viruses under ideal conditions	Completed
Evaluate sensitivity & specificity of assay *-Vary the amount of pathogen target over the range from femtomolar to micromolar to determine a limit of detection.* *-Test in the presence of spiked unrelated nucleic acid to demonstrate the aggregation response is specific to target nucleic acid sequence.*	Expect to complete by end of March 2012
Objective 2: Integrate the sample preparation and signal readout modules into the platform and evaluate the robustness of our technology by testing with real plant tissue samples. To begin Oct. 2012, or whenever Objective 1 is complete.	

Much of Objective 1 is already complete, but so far only for one pathogen (Cucumber Mosaic Virus, CMV). We will also demonstrate detection of at least one more pathogen (probably Tomato Yellow Leaf Curl Virus, TYLCV) before proceeding to Objective 2.