How did we get here?
THANK YOU

J. Frank Schmidt & Son Co.

J. Frank Schmidt Family Charitable Foundation
Potential Projects & Priorities:

1. **Counting trees**: remote sensing  
   (issues: stakes, low lying branches, leaves on liners, weeds, spacing/density, access to container/field crop)
2. **Measuring trunk caliper**: remote sensing  
   (issues: varying elevation of measuring point/grafted or budded trees, single diameter versus average, stakes)
3. **Measuring shoot height/width**: remote sensing  
   (issues: wind, stakes)
4. **Automate marking/painting tree trunks**
5. **Automate inventory** (e.g. RFID)
6. **Automate grading trees**
7. **Precision agriculture**: in-field measurement
This looks easy
Issues
Hand-held
Remote sensing
Comprehensive Automation for Specialty Crops (CASC)

Sanjiv Singh, Jim Owen, et al.

NIFA (f. USDA) Specialty Crops Research Initiative: 2008-51180-04876

August 2009
April 2010
“The collaborative team continues to pursue a range of cost effective solutions to nursery inventory processes using a variety of sensors, aerial imagery, and RFID.”
Individual updates:

1. Sensors: Reza and Joe
2. Aerial imagery: Dharmendra
3. RFID: Dharmendra
5. UAV (unmanned aerial vehicle: Joe and Reza (outside demonstration)