### Developing a More Sustainable and Profitable U.S. Specialty Crop Industry

#### Autonomous Orchard Platform
- Pace of work is faster than traditional ladder climbing.
- Commercialization in progress with tractor-like steering controls.
- Sanjiv Singh | sSingh@CMU.edu

#### Digital Trap
- Growers save time spent manually monitoring traps.
- Up-to-date feedback hastens pesticide decision making.
- Spensa Technology actively pursuing commercial patent.
- Johnny Park | jpark@purdue.edu

#### Harvest Assist
- Demonstration of apple harvest machine from DBR Conveyor Concepts.
- Harvest 25% faster with no increase in bruising.
- Replaces ladders and bags.
- Chuck Dietrich, Phil Brown, Mike Rasch | russ@philbrownwelding.com

#### On-the-Fly Tree Counter
- Infrared counters in Washington tree fruit nurseries ~85% accurate at 3 mph.
- Designing for sale price of under $2,000.
- Jim Owen | jim.owen@oregonstate.edu
Comprehensive Automation for Specialty Crops (CASC) is funded by the USDA Specialty Crop Research Initiative—established by the 2008 Farm Bill—with 100% matching funds from industry and university partners.

CASC is a flagship project, with $12 million in total funding, dedicated to developing comprehensive automation strategies and technologies for the $18 billion U.S. deciduous tree fruit industry and the $17 billion U.S. nursery and landscape industry.

We are

• Multi-disciplinary—engineers, scientists, extension educators, growers, manufacturers

• Multi-institutional*—universities, government labs, companies

• Collaborating with nurseries and orchards—in California, Maryland, Oregon, Pennsylvania, and Washington—representing 74% of U.S. tree fruit production

*PARTNERING INSTITUTIONS—Universities: Carnegie Mellon University (lead), Oregon State University, The Pennsylvania State University, Purdue University, Washington State University; Government Lab: USDA Agricultural Research Service Appalachian Fruit Research Station; Companies: Vision Robotics, Toro, DBR Conveyor Concepts, Trimble

DIRECTIONS
Sunrise Research Orchard is located between Wenatchee and Quincy on Highway 28.

From Wenatchee travel on WA-28 East about 13 miles and turn left on Sunrise Ln. Note: use caution as turning left onto Sunrise Ln. crosses highway traffic. Consider turning right, making a U-turn, then crossing the road when traffic is clear.

From Quincy travel on WA-28 West about 16 miles and turn right on Sunrise Ln.

Sunrise Research Orchard is located between Wenatchee and Quincy on Highway 28.

From Wenatchee travel on WA-28 East about 13 miles and turn left on Sunrise Ln. Note: use caution as turning left onto Sunrise Ln. crosses highway traffic. Consider turning right, making a U-turn, then crossing the road when traffic is clear.

From Quincy travel on WA-28 West about 16 miles and turn right on Sunrise Ln.

Sunrise Research Orchard is located between Wenatchee and Quincy on Highway 28.

From Wenatchee travel on WA-28 East about 13 miles and turn left on Sunrise Ln. Note: use caution as turning left onto Sunrise Ln. crosses highway traffic. Consider turning right, making a U-turn, then crossing the road when traffic is clear.

From Quincy travel on WA-28 West about 16 miles and turn right on Sunrise Ln.