Autonomous Orchard Vehicles

Abstract:
Comprehensive Automation for Specialty Crops is a four-year project focused on the development of efficiency-improvement and labor cost-reduction technologies for the apple and nursery tree industries. In this talk we present the Autonomous Prime Movers (APM), a family of vehicles capable of autonomous driving in orchards and nurseries. The APMs carry tools and sensors to automate various farm activities—mowing, spraying, fruit and tree counting, discuss the technical aspects of the current vehicles and illustrate the talk with a variety of videos taken during field deployments in Pennsylvania and Washington states.

Speaker Bio:
Brad Hamner holds a bachelor’s degree in mathematics and a master’s degree in robotics from Carnegie Mellon University. Since 2002 he has worked in the Field Robotics Center, specializing in navigation and path planning for unmanned ground vehicles, as well as control strategies for mobile manipulators. He has made robots for such diverse applications as agriculture, security patrol, and fabrication on an assembly line.