Mechanical Thinning
The Bonner
Day of thinning (defoliation) and 2 months later
• String thinning bloom to desired crop level leads to more defoliation than most can stand
• Thinning bloom to 50% of desired clusters reduces defoliation to a tolerable level
Reduce hand bloom thinning by 50%

One person string trimming to 50% of clusters can cover 10X the trees as hand bloom thinners

One person with a string trimmer can double the speed of a hand bloom thinning crew of 10
The Case for String Thinners

- Hand blossom thinning allows for true precision cropping but requires one person per acre
- We have 125 acres to blossom thin
- Without string thinning I need 125 workers for 2 weeks
- We need 55 workers for the rest of the growing season including harvest
- An additional 70 H2a workers = $105,000 in annual fees, $500,000 in capital for housing, $125,000 in capital for busses
- 70 workers require 3 additional supervisors
20+ Billion Times
1 apple/ 2 seconds
1939  2015

75 years of minor innovation
The Scout
Littau Harvester
Zucal and Pluk-O-Trak
Nighttime is the right time
Night Harvest
Harvest Assist

Removes ladders
Bin to the worker
Pick in bags
Right fruit in/ right fruit out
Global Challenge
Global Solution
Global Collaboration