

Current Greening Box Tax Projects

Peter McClure

FCPRAC

“Box Tax Council”

Why Bother?

Cause I really like to
grow citrus

Futch Trip – Brazil vs. HLB

Brazil - HLB SERIOUS problem

Brazil – HLB Different, it CAN take you out

Brazil - #1 – find infected trees – push out ASAP

Brazil - #2 – kill Psyllids

Brazil – Bove' Program - some success

Brazil – failure too, lots of groves dead and gone

Brazil – exit strategy - convert to Sugarcane

Florida vs. HLB

Florida – HLB SERIOUS problem

Florida – HLB different, it CAN take us out

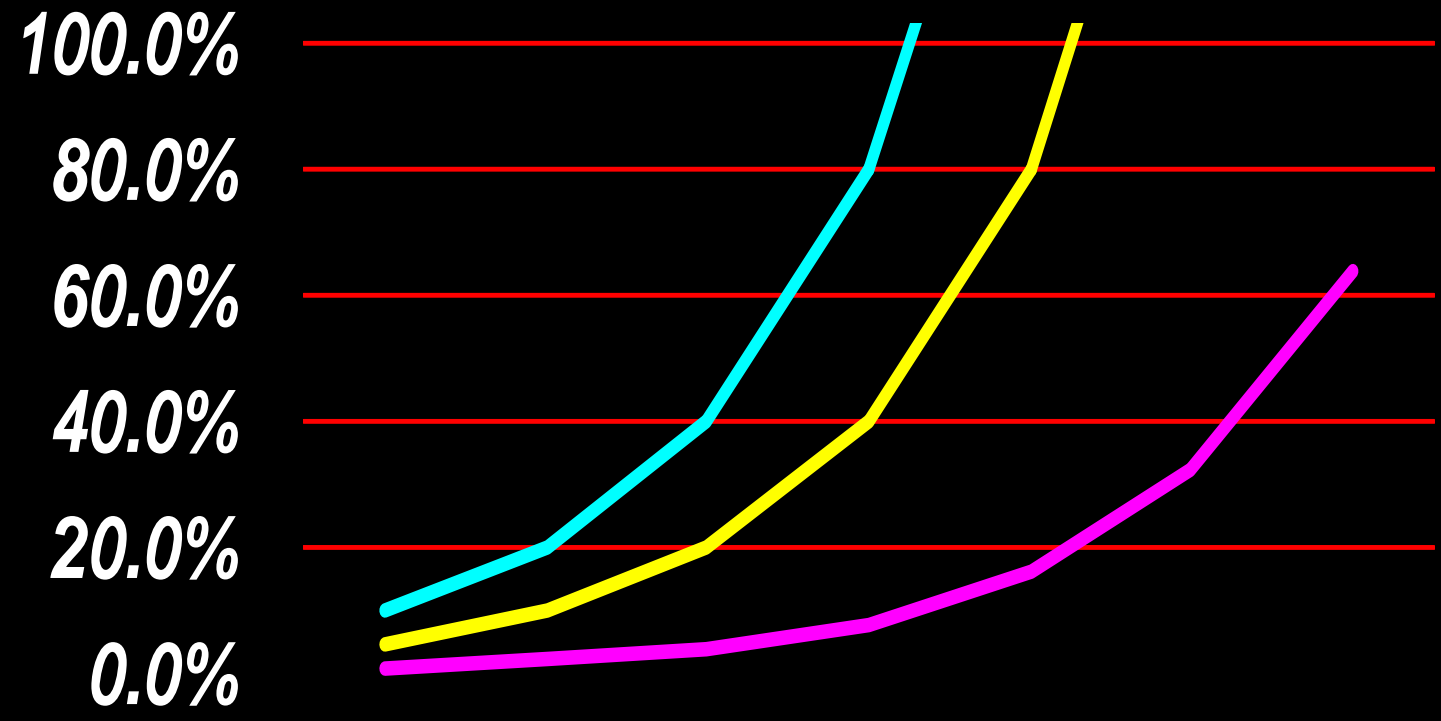
Florida – geographical, climate, cost, &
social disadvantages vs. Brazil

Florida – No proven control strategy yet

Florida – exit strategy - ?????? – Good luck!

Hypothetical Death Curve @ 1:2 Ratio

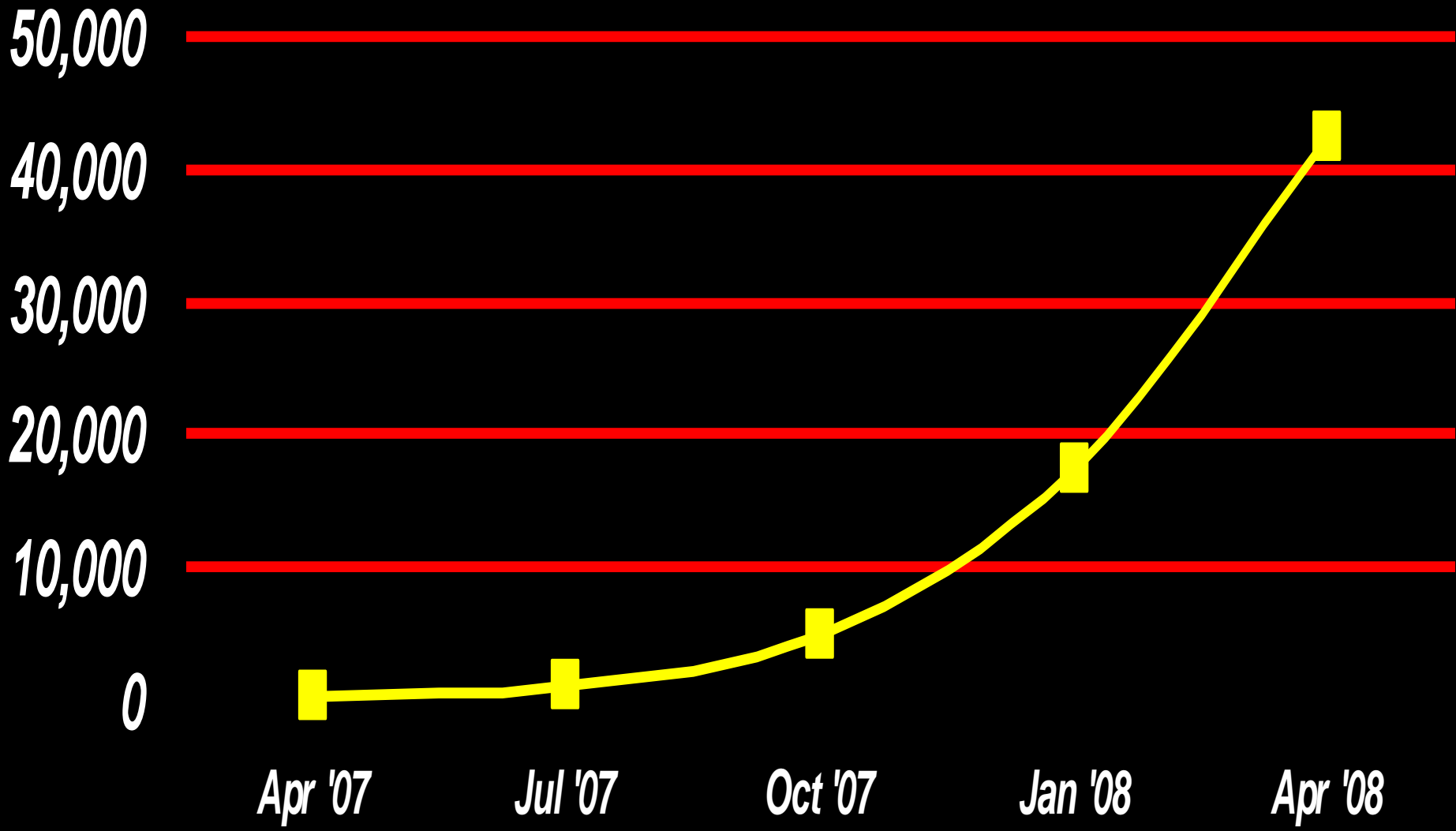
**% of Trees
Infected**



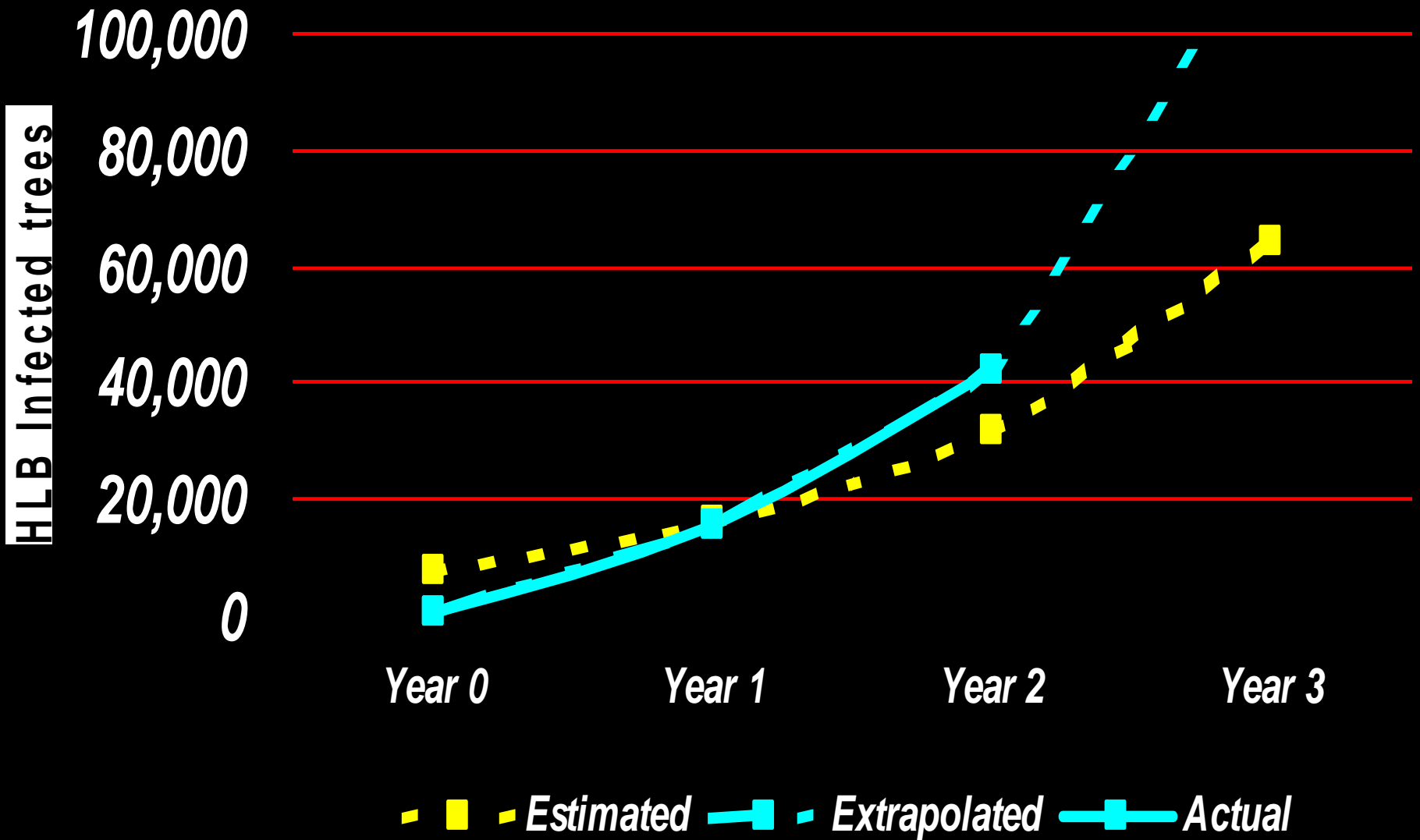
Year 0 Year 1 Year 2 Year 3 Year 4 Year 5 Year 6

— 1% HLB — 5% HLB — 10% HLB

Evans HLB Infected Trees



Evans Est., Actual, Extrapolated HLB Trees



Other Control Strategies

Need to search the world to find possible control strategies

Grower trials and experience are very valuable, but success stories need to be clinically proven

Florida HLB/Canker Research

2 years ago - \$ 1 million

Last Year - \$ 7.2 million

This year - \$???

Research – scientists and funds are finite, scarce resource, not possible to research every good idea

Research – must be carefully targeted to the most scientifically plausible and the most economically feasible areas

How do we do that?

Herd Cats – alphabet soup of hardheads

FCIRCC

FCPRAC

FDOC

FCC

FCM

IRCL, GCCGA, PRVCGA, HCCGA, FCPMA,
etc.

Worked together to Devise a
Research Strategic Plan

Greening/Canker Research Management and Commercialization Plan

March 10, 2008

*Anglea, Jackson, McClure,
Norberg, Rogers*

Greening and Canker Research Management Plan

Objectives:

Urgently find solutions to production problems

Specifically Canker and Greening, but understanding other concerns are looming

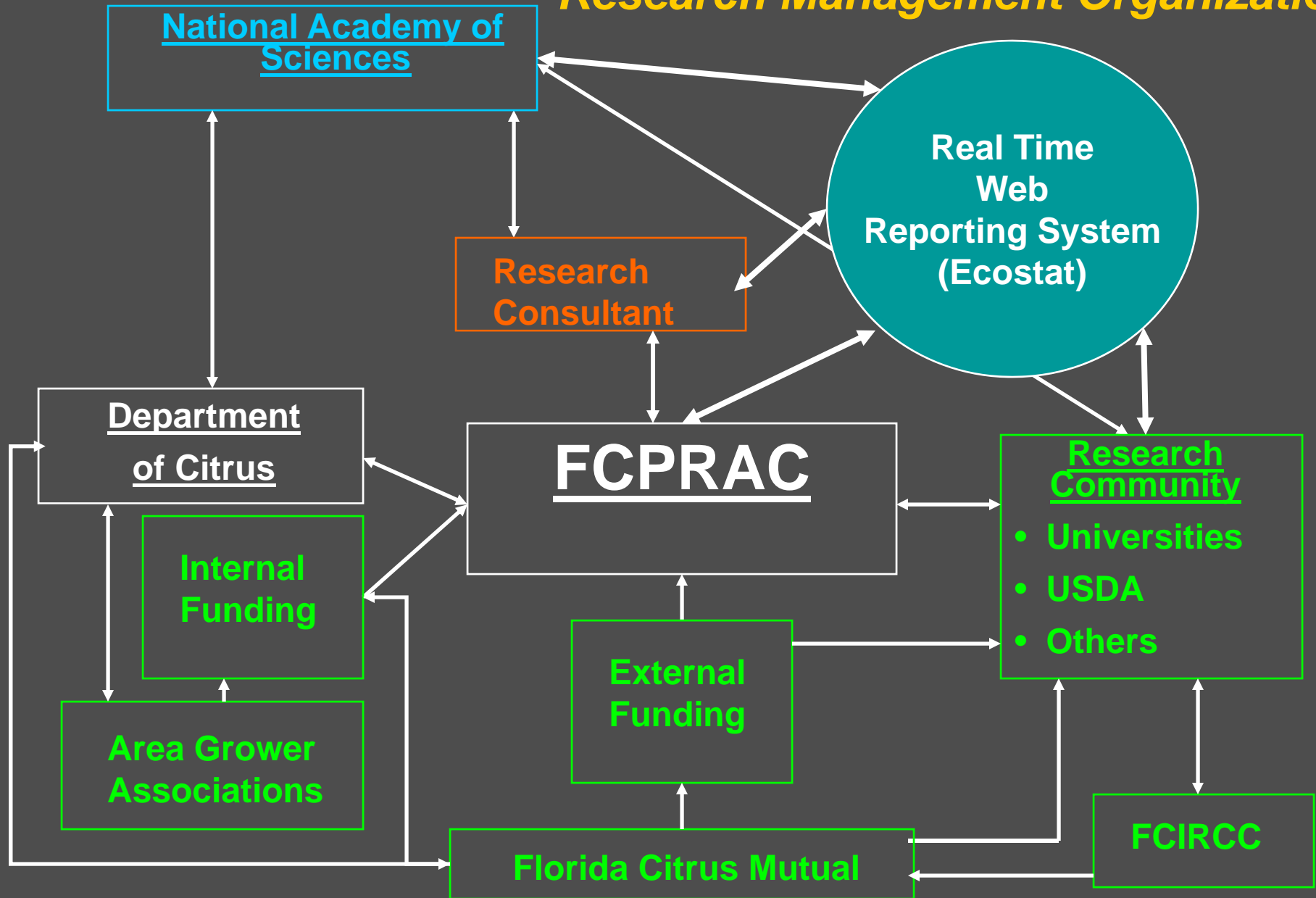
Provide accountability and responsibility

Ensure research spending is as EFFICIENT and EFFECTIVE as possible

Communicate and coordinate activities to stakeholders

Provide information and process that will allow ALL stakeholders to contribute and participate effectively

Greening and Canker Research Management Organization



National Academy of Sciences

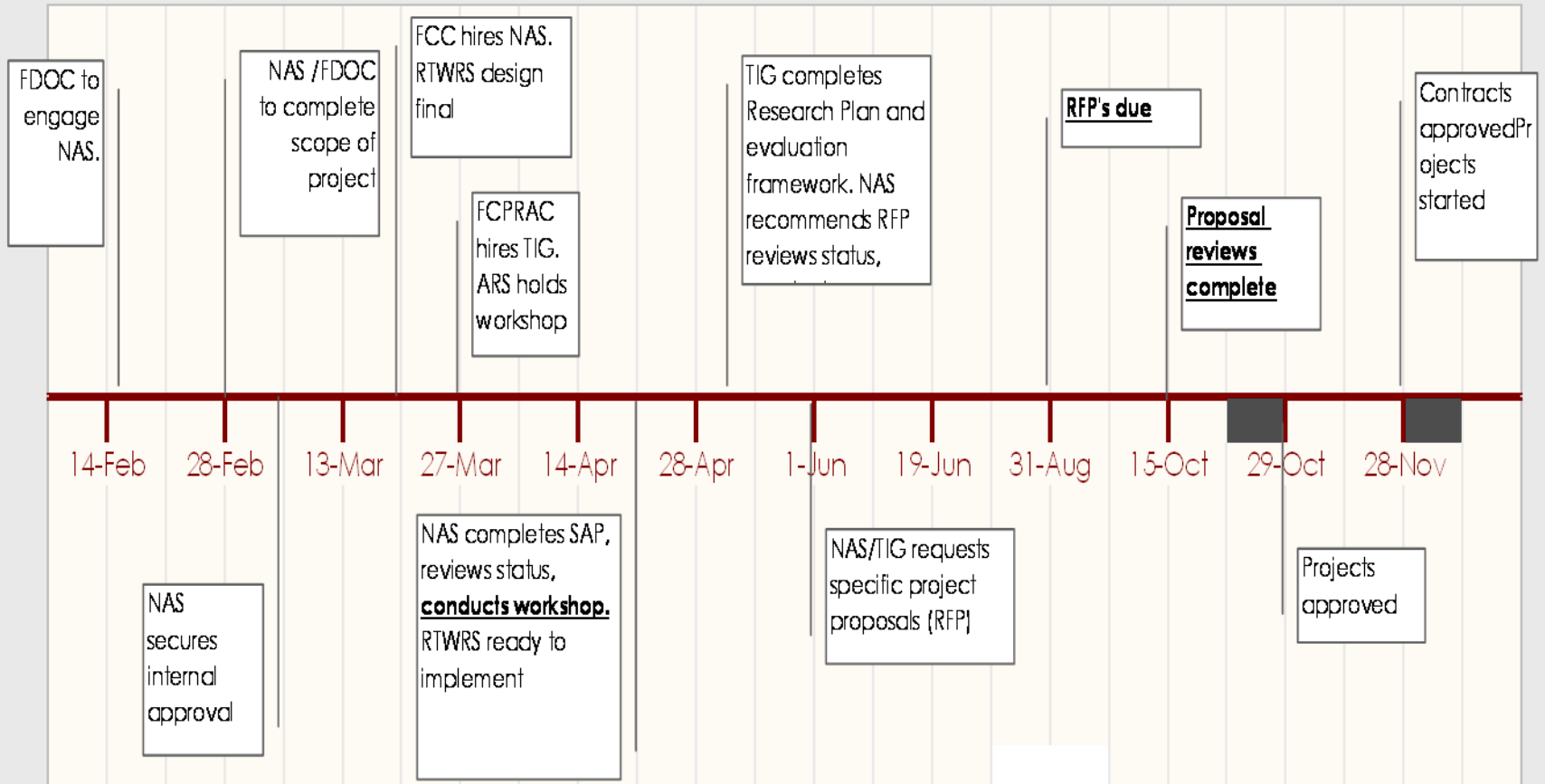
Established in 1863.

Independent Scientific Body - NAS serves to "investigate, examine, experiment, and report upon any subject of science or art" whenever called upon to do so by any department of the government.

NAS can tap over 6,000 of the world's top scientists and engineers

These guys do BIG SCIENCE – Nuclear bombs, energy, transportation, airports, medical research, California grape Growers - Pierce's Disease

Greening and Canker Research Timeline and Milestones



Real Time Web Reporting System

Global Information Harvest



Internet Bots seek out new research & new publications, harvest & display scientific information about citrus issues

Accountability



Intellectual property from funded projects is digitally linked to proposals, reports & scientific papers

Real Time Updates



Researchers manage their own accounts online; projects, finances & results are updated in real time web reports



Florida Citrus Production
Research Advisory Council

California Citrus Research Board

Five Projects Approved for Funding

- \$180K: Nucleic acid detection of plant pathogens
- \$120K: Reagentless sensors to detect plant responses
- \$24.0K: Cultivation and rapid detection of HLB
- \$23.5K: Identification of HLB using small RNAs
- \$17.0K: Genetic diversity and fingerprinting

Contracts Not Yet Written

- Expected soon



Athena Biotechnologies

Partnered with Hartung at USDA

- Bacteria were cultured from HLB-infected plants
- Quorum-sensing technology

New Bacteria Identified from Infection

- Hartung was not able to confirm as HLB

Cultures sent to Commercial Lab for Identification

- Results expected in about 10 days

Currently Preparing for Second Run of Culture Tests



Southern Gardens HLB Lab

Support For USSC HLB Testing
Laboratory \$9,352.47

Additional Support for Southern Gardens
Diagnostic Laboratory \$16,000.00

3,300+ samples per month

Thank you