

## CRDF Key Opportunities

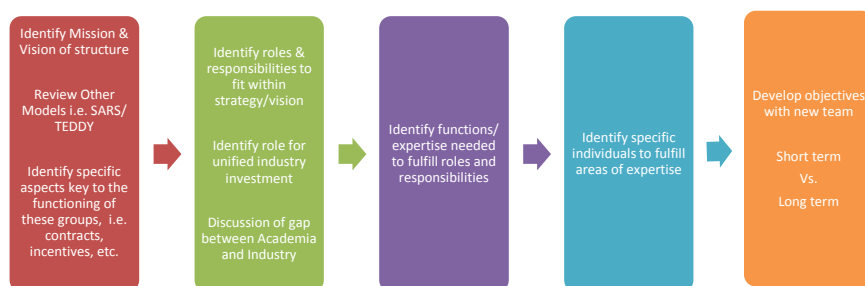
### How to.....

- Facilitate the development of a “systematic program structure” that can influence, organize, and track progress.
  - This structure should influence recommendations for further research and/or funding.
  - Could include a consortium of experts, regulatory professionals, registrants, industry representatives, etc...
- Develop a “stage gate” model to develop, test, and implement solutions in a more structured and unified approach. Incorporate regulatory structure in parallel.
- Facilitate the development of a pipeline roadmap to coordinate and understand candidates for CLas management in the field
- Coordinate outreach efforts with companies and start-ups that could help commercialize solutions. Design map of expertise needed, linking with associated company.
- Coordinate collaboration efforts amongst researcher community through monthly organized meetings/calls/forums for communication.
- Continue knowledge mapping approach, as in independent next step, in topics not yet covered. This could include learning from experts in global citrus regions dealing with greening, as well as related diseases in other crops.

## Detailed Project Plans Per Opportunity

**#1:** Facilitate the development of a “systematic program structure” that can influence, organize, and track progress.

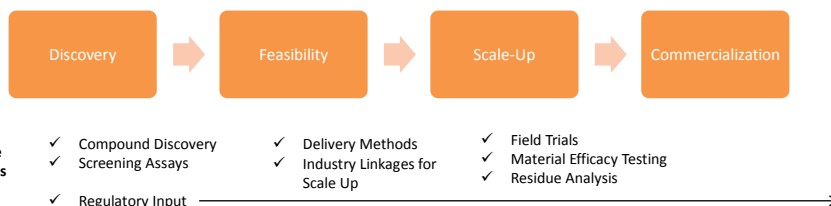
*Situation: Organization and coordination of research is essential to move forward with complex solutions. A new operating model is needed for problem solving, and for implementing subsequent recommendations.*



**#2:** Develop a “stage gate” model to screen, develop, test, and implement solutions in a more structured and unified approach.

*Situation: There is a lack of coordination in approaches and methods to identify and develop promising treatments. For example:*

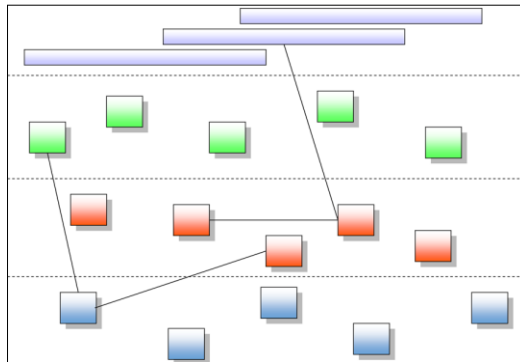
- Screening large numbers of candidate antibiotic/antimicrobial treatments needs a reliable assay system that is broadly used to compare and select from candidates for further testing
- More field trials are needed to evaluate promising treatments out of screening.
- Regulatory process for approval of treatments is not currently incorporated into the development process
- Delivering antibiotics or antimicrobials to citrus phloem requires new methods beyond foliar application
- Characterization of residue presence and behavior from treatments is critical to predicting success



This would outline a set of standardized methods, as well as checklists of activities that need to be completed per review of “structure” put in place per recommendation #1.

**#3:** Facilitate the development of a pipeline roadmap to coordinate and understand candidates for CLAs management in the field

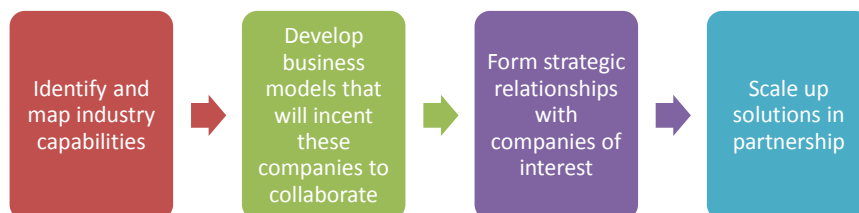
*Situation: Antibiotics, antimicrobials and heat treatments offer potential to stabilize tree health and productivity until other strategies for treating HLB emerge, but many are years away from being practical. A pipeline of treatments must be developed and evolved for short, medium and long term.*



**#4:** Coordinate outreach efforts with companies and start-ups that could help commercialize solutions. Design map of expertise needed, linking with associated company.

*Situation: Discovery of treatments is underway in research labs, but the connection to companies with capacity to commercialize is lacking. For example:*

- *Small market incentives limit corporate interest in overcoming financial and regulatory hurdles*
- *A full landscape of industry and start-up expertise is lacking*



**#5:**

Coordinate collaboration efforts amongst researcher community through organized meetings/calls/forums for communication

*Situation: Researchers are often isolated from progress in related areas.*

*Next steps*

- *Identify approaches that have worked and those that have not worked*
- *Create new strategies for engagement building on the concepts that have worked.*
- *Implement new engagement strategies.*



**#6:** Continue knowledge mapping approach, as in independent next step, in topics not yet covered. This should include learning from experts in global citrus regions dealing with greening, as well as related diseases in other crops.

*Situation: This first round of knowledge mapping was not comprehensive in covering all of the experience research and knowledge*

*Suggestions for further exploration:*

- *Identify next key topic to knowledge map*
- *Ensure global historical knowledge is captured*
- *Maintain a global view of all new research and learnings post mapping*

