



TAXA

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Investor Presentation  
May 2016



# A Bioengineered World

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Plants are amazing, they are like  
mini-solar powered factories.

# Economics – Glowing Plant – Shipping Fluc v1

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## **Generates Cashflow**

**\$650K** Pre-orders  
**90%+** Gross Margin

## **Positive Story**

Marketing for Biofab

## **Proved Science**

Best assay for  
developing platform

\* Long exposure photograph, luminosity still being enhanced

## Fragrant Moss – ready to ship



## New Creative Media – addressing EPA issues



# Maker Kit – Shipping in Beta



# How We Make Money

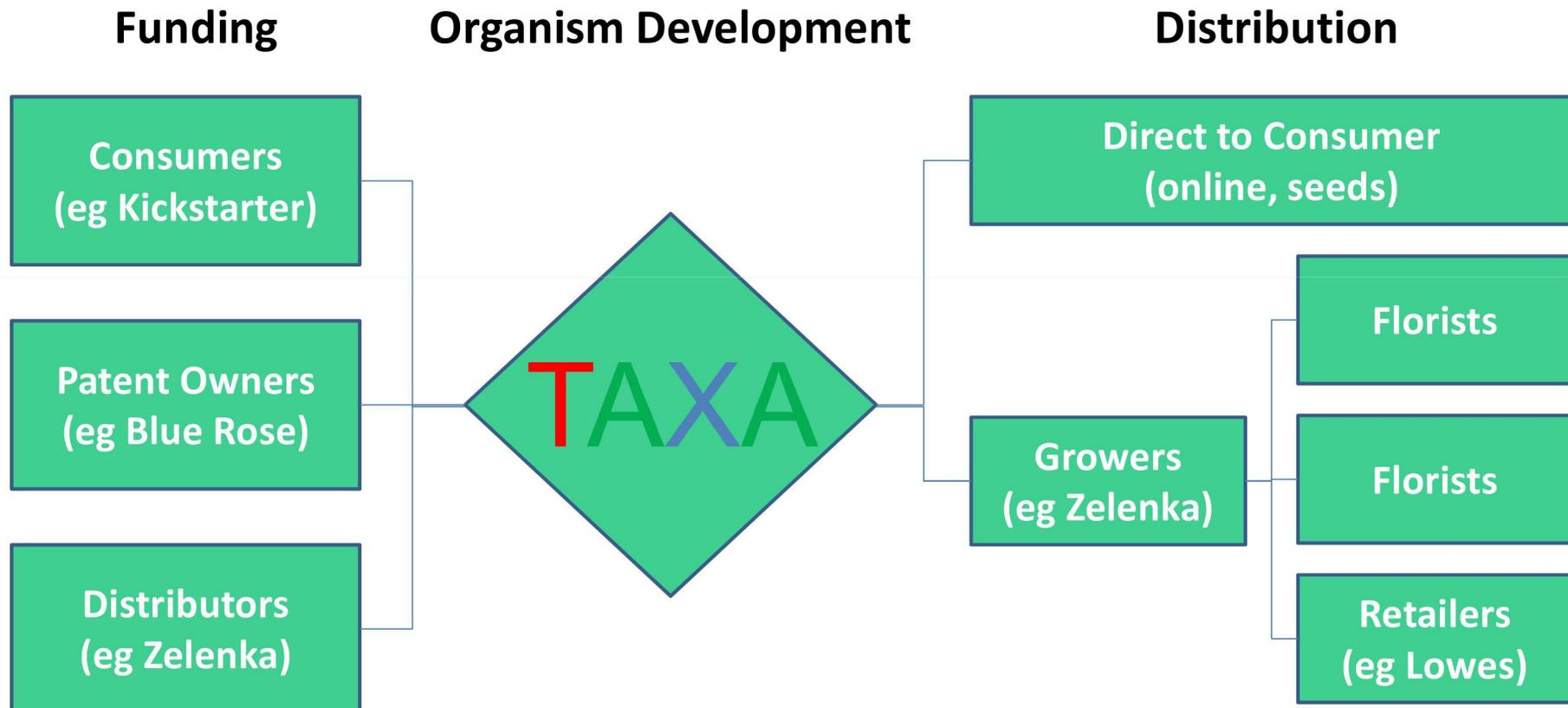
## Collaborative Research Agreements

- We partner with other companies on the development of some new products
- We have signed three of these agreements with one additional in the final stages of contract review
- Depending on the nature of the research goals these revenues are either milestone based or monthly recurring payments
- These agreements are priced at the cost for us to complete the work, our profit comes from sharing in the revenues from the completed product

## Sale of Products

- We earn revenues from the sale of completed products to consumers
- Products developed internally, like the Glowing Plant, typically have high gross margins (>90%)
  - In some instances where another party has a patent claim on part of the product we may also pay out royalties to third parties
- Products developed under collaborative research agreements earn us royalties of between 7.5% and 92% of revenues depending on how much risk we incur on the project
  - Typically we have no costs with these as the partner handles manufacturing

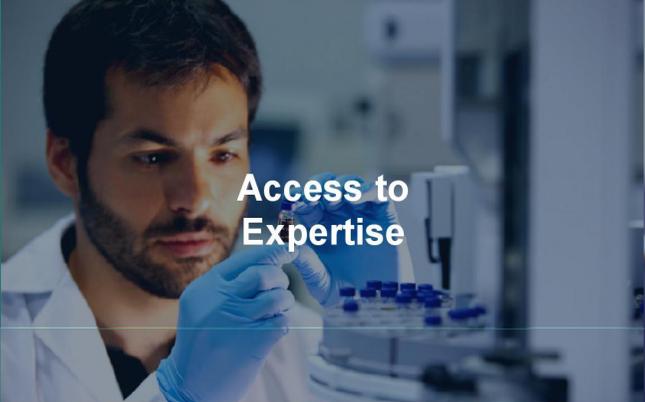
# Partnership Model



# Partner Value Proposition



**Reusable DNA  
Parts**



**Access to  
Expertise**



**Agile  
Development**



**Multi-gene  
Constructs**



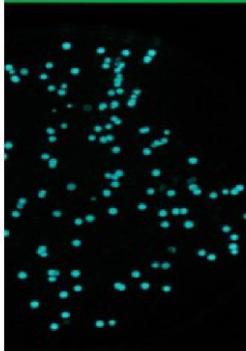
**Automation**



**Unregulated  
Products**

# Technology Stack

## PROTEIN ENGINEERING



We have two systems that allow us to perform protein engineering on the entire pathway:

**Directed Evolution:** we mutagenize the plasmid randomly and then screen for variations which improve performance. This is faster and cheaper than the saturation scan but produces more false positives which improve the genes in E. Coli but don't translate into plants (eg through codon optimization)

**Saturation Scan:** We step through each codon in the pathway and substituted the other 19 possible amino acids that could be inserted at that point. We've tested this on pathways up to 2,000 amino acids long. Hits generated with this method are more likely to translate into higher performance in plants, but the process is more expensive than directed evolution.

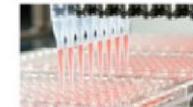


## AUTOMATED DNA ASSEMBLY SYSTEM



We've automated our DNA assembly system which means no more nights in the lab working on cloning. Currently all of our parts are in the Golden Braid assembly system; we are in the process of adding support for MoClo parts. You can design your sequences using your favorite DNA editing software.

The list and description of available parts can be found on github at <https://github.com/TAXA/DNAlibrary>.



## TRANSIENT EXPERIMENTS

Transient experiments are designed to enable you to test a DNA construct quickly and without the expense of a stable transformation. This allows a relatively large number of constructs to be tested quickly and affordably. The key bottleneck here is the assay. We are developing new protocols all the time - currently we offer the following experiments:



- Callus: Arabidopsis, N. tabacum, Rose
- Seedlings: Arabidopsis, N. tabacum, Petunia
- Leaf tissue: N. tabacum
- Petal tissue: Rose, Petunia
- Epidermis: Onion

## STABLE TRANSFORMATION

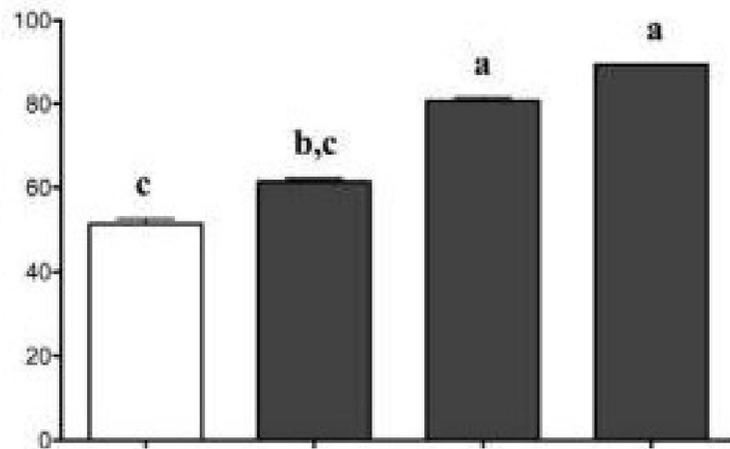
We generally use the biolistic method for stable transformation, though we do have agro-bacterium methods available in case you want to prototype a construct more cheaply.

While the biolistic method is slower and more expensive to generate a single plant, it's key advantage is that - if care is chosen with DNA parts used - the final product is immediately free for sale and distribution in the United States without requiring regulatory review. This saves years and millions of dollars from the budget for getting the product to market.



# Fast Growing Lettuce – Biz Dev

## Biomass of Engineered Lettuce

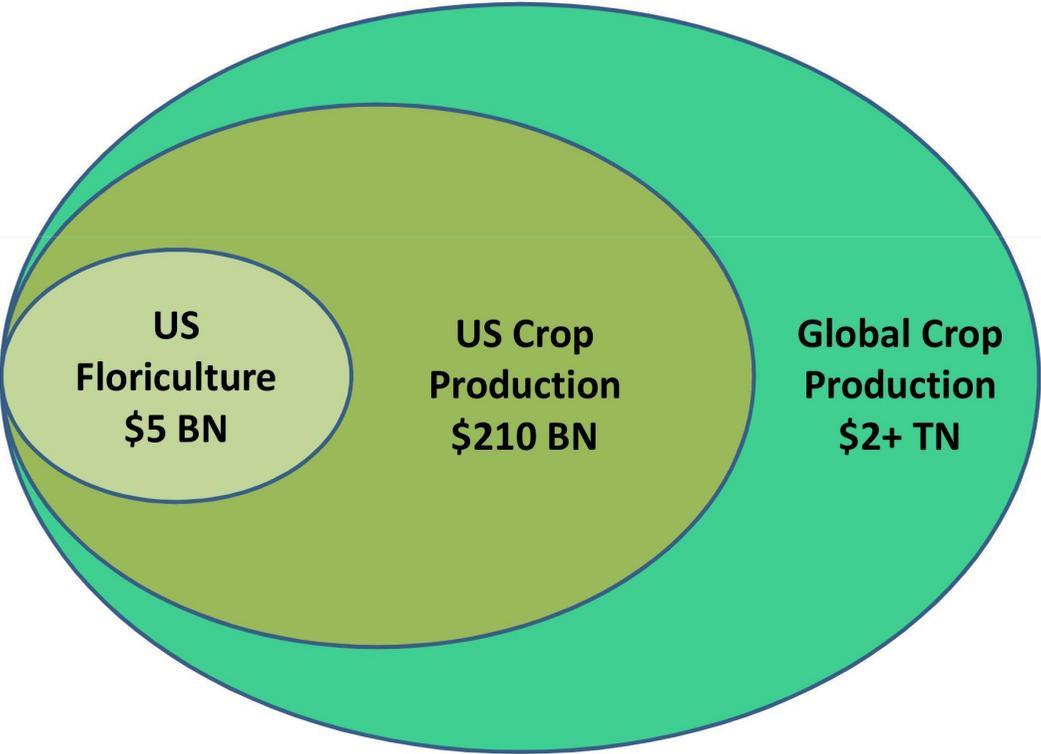


- = Wild Type
- = Enhanced Genes

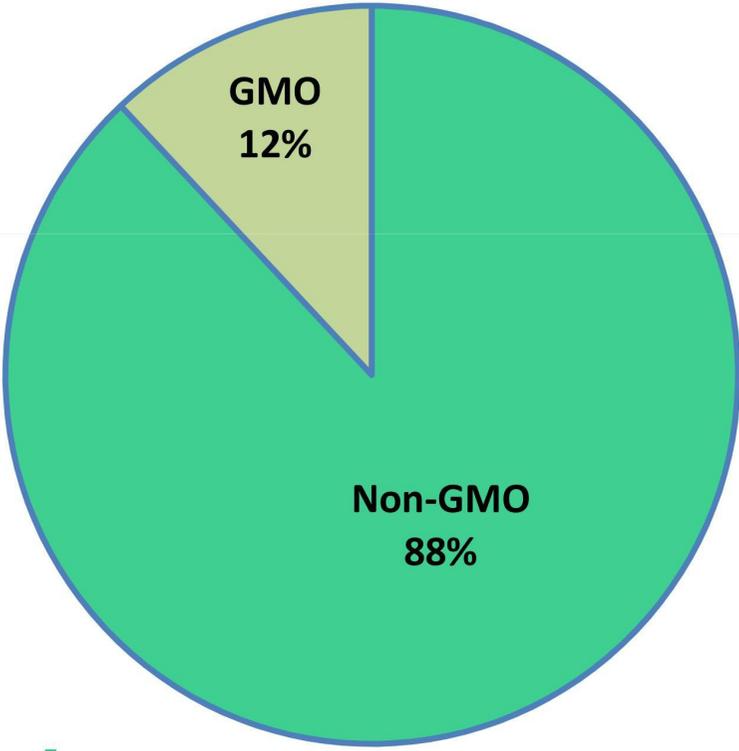


# Long Term Addressable Market

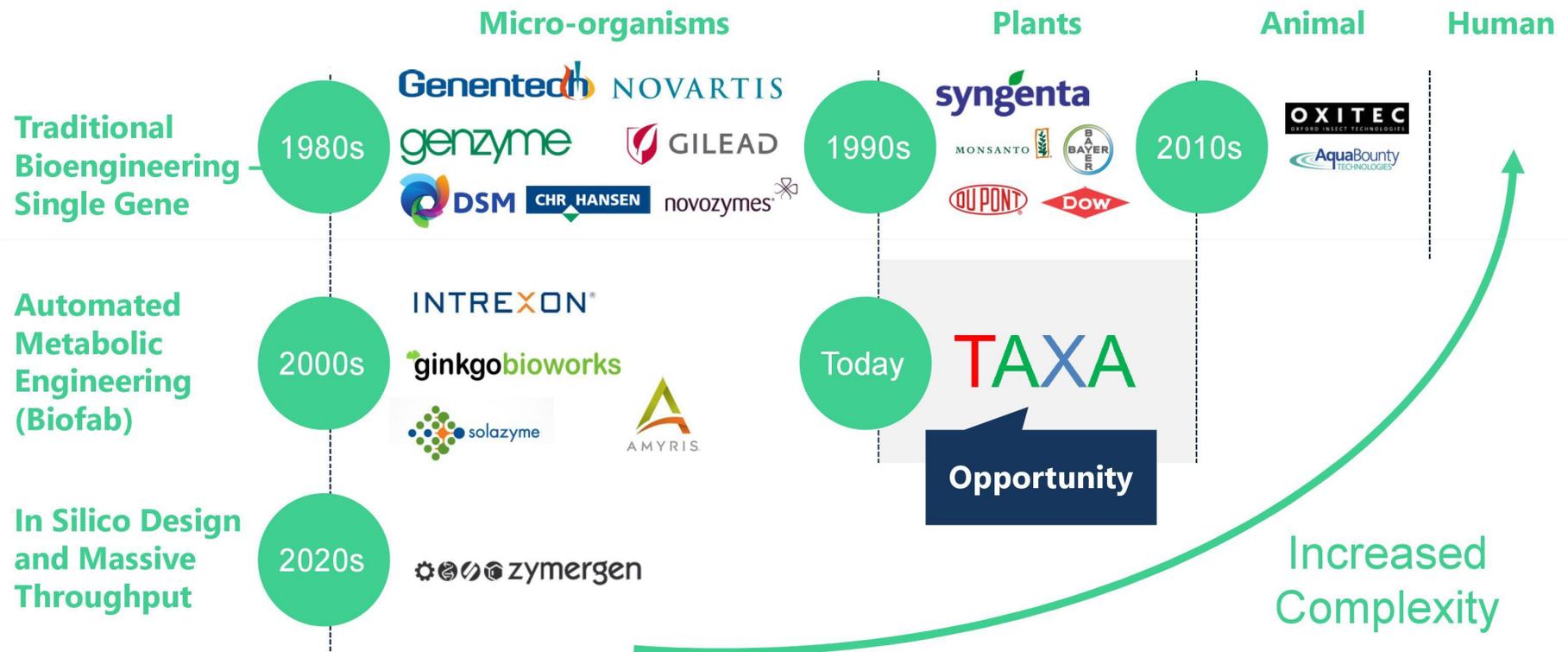
**Agriculture production (wholesale income)**



**Engineered Crops**



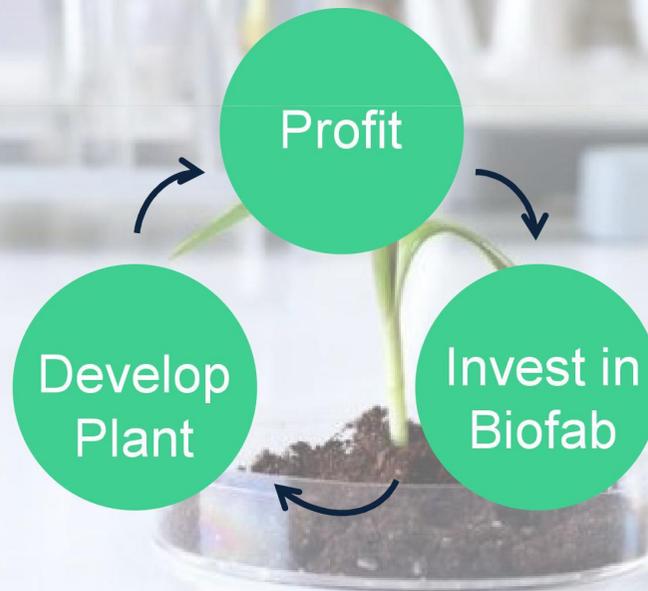
# Competitive Landscape



# Sustainable Strategic Advantage

**80-90% gross margins**  
**Pharma-type cashflow structure**

**Sell forward to validate  
market demand and key  
sales and distribution  
channels ahead of  
product development**



**Continuous improvement in  
platform allows us to stay  
ahead of competition and  
develop more complex  
products**

# Management



**Antony Evans**  
**Founder & CEO**

- MA in mathematics from University of Cambridge
- MBA from INSEAD
- GSP Singularity University
- Consultant at Bain & Company



**Dr. Jihyun Moon**  
**Chief Scientific Officer**

- PhD & post-doc in Plant Biology at University of California, Berkeley
- BS/MS in biology at Seoul National University



**Dr. Jamey Kain**  
**Senior Molecular Scientist**

- PhD & post-doc in Molecular Biology at Harvard University
- BS in Cell & Molecular Biology at University of California, Berkeley

# Accomplishments + Milestones

2014-2015

## Early Seed - \$450K

- ✓ TAXA Market Validation
- ✓ Science Proof of Principle
- ✓ Regulatory pathway validation
- ✓ \$650k crowd funding

2016-2018

## Late Seed - \$1-2MM

- Distribute first Product
- Build PlantFab1
- Grow revenues to \$5MM ARR
- Build full team
- 15 TAXA partnerships
- Fortune 500 partner

2019 Onwards

## Series A - \$5MM+

- Build PlantFab2
- Launch API/Cloud lab

A person wearing a white lab coat is working in a laboratory. They are holding a test tube that contains a small green plant. The background is a blurred laboratory setting with other test tubes and plants.

TAXA

Thank you!

[www.taxa.com](http://www.taxa.com)

[antony@taxa.com](mailto:antony@taxa.com)

+1-415-779-6333