



**Breaking biofuels market barriers by  
increasing yields of biofuel feedstocks**

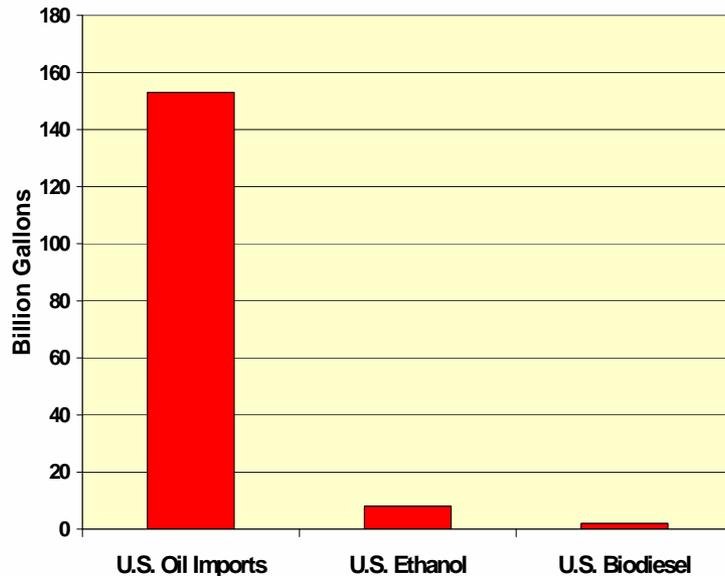
**Ginny Orndorff  
President & CEO**

21<sup>st</sup> NREL Industry Growth Forum

October 28-30, 2008

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# Value Proposition



Renewable Fuels Assoc. and Andrews Kurth LLP

## Opportunity:

U.S. imports 153 B gal of oil each year (\$350 B)

## Market Need:

Lower cost of feedstocks

## EG technology will:

- Increase plant feedstock yield/acre >20% (over \$8B value)
- Increase algae productivity 100% (over \$7B value)

# Proven Technology Platform



Ancestral Rice

Gene adaptation due to domestication

30,000 genes



Domesticated Rice

## EG Adapted Traits Platform



**6 adapted genes with track record of successful trait improvement**

# Increase BioFuel Feedstocks

**EG platform increases yield and productivity of:**

## **First generation feedstocks**

- Corn
- Sorghum
- Soybeans

## **Second generation feedstocks**

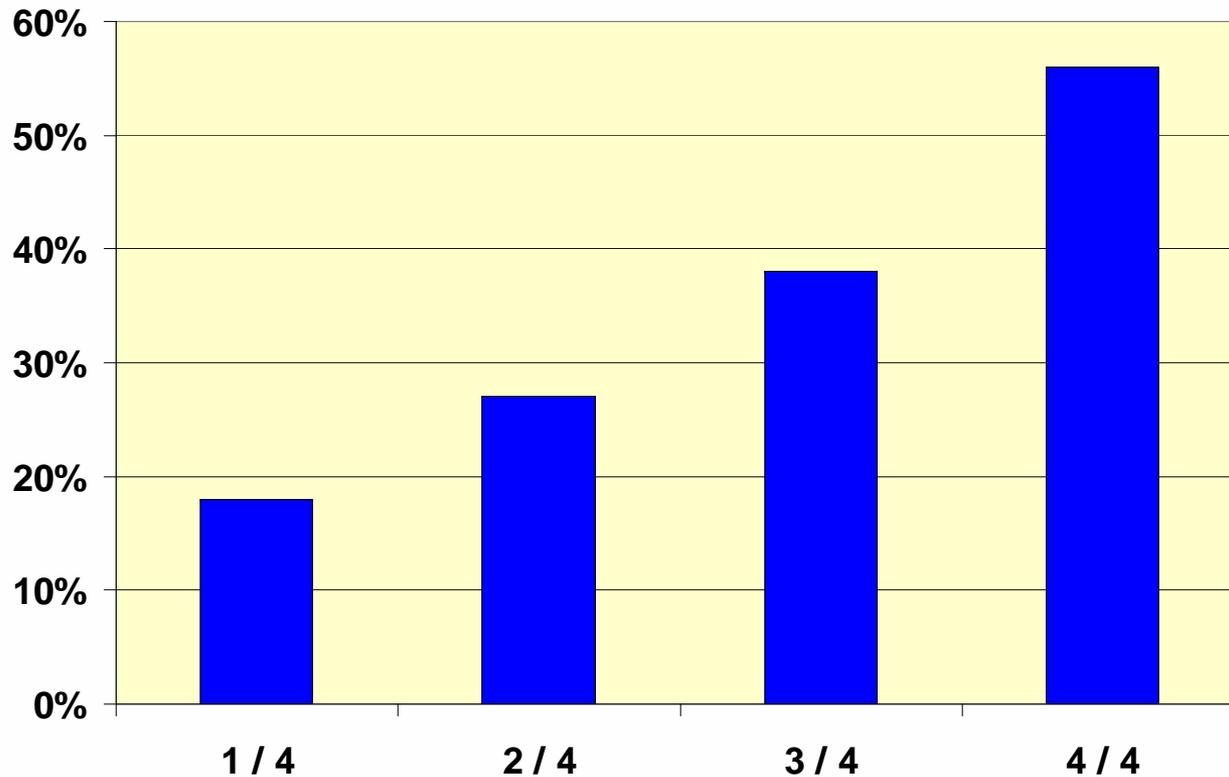
- Camelina
- Switchgrass
- Miscanthus

## **Third generation feedstocks**

- Algae

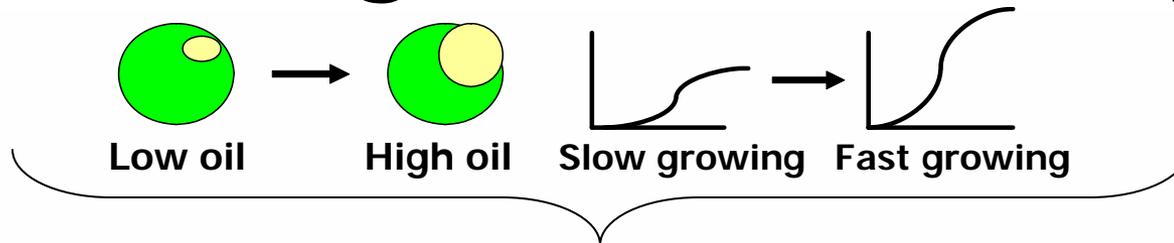
# Corn Yield

Yield % Increase over Lines  
with 0 "Best" Adapted Alleles



Stacked "Best" EG Adapted Alleles

# Microalgae Productivity



**EG Adapted Traits Platform**

**Adapted microalgae oil and growth rate genes**

**High productivity production strains of any species**

- For any production system
- For producing products from lipids, carbs, proteins

# Plant Genes Markets

Trait	Global Market 2025
Genes to Increase Yield per Plant	\$10 B to \$80 B
Genes to develop energy crops	\$8 B to \$10 B

Public presentation by BASF/Monsanto

# Algae Biodiesel Market

Major companies have committed to algae partnerships:

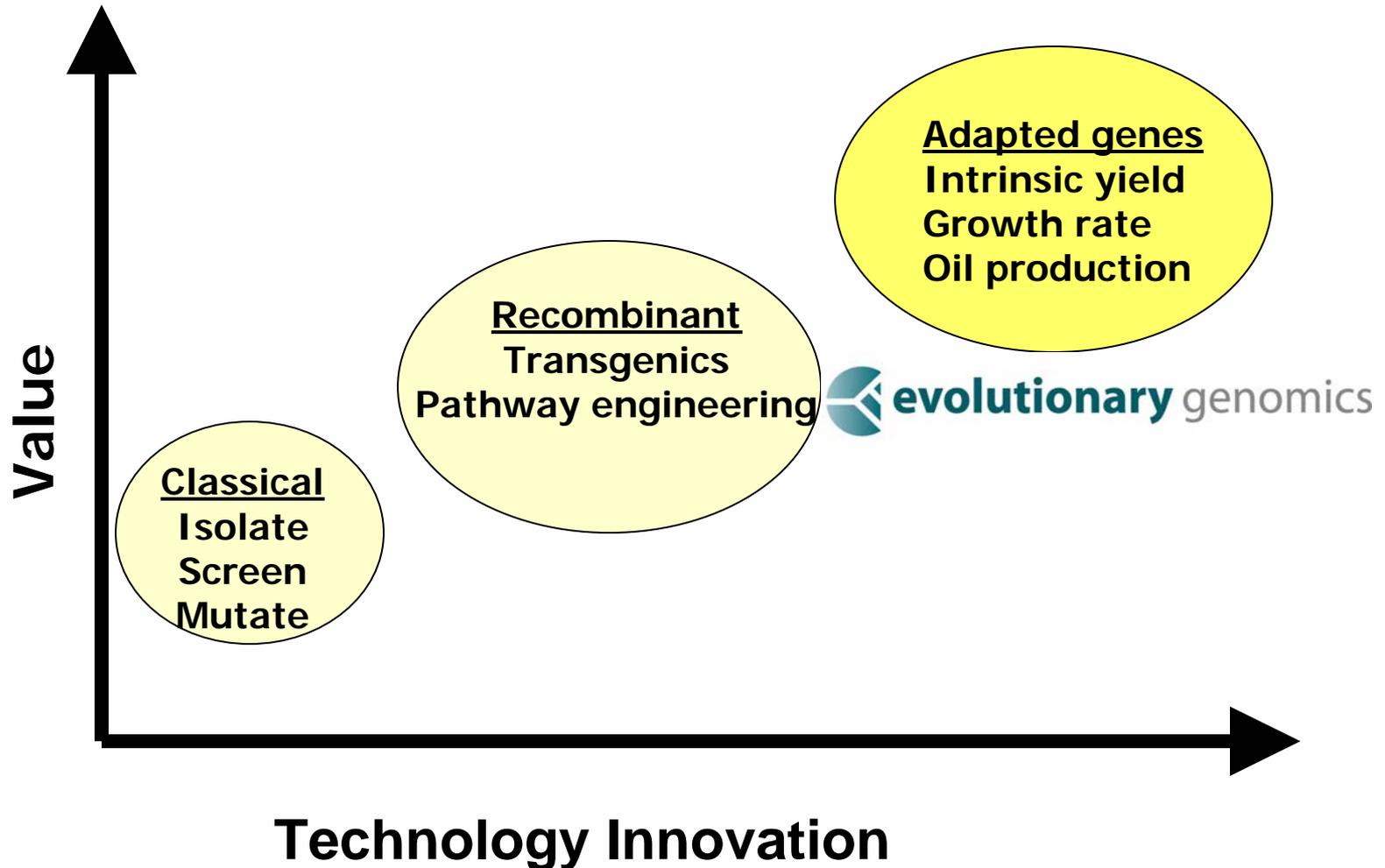
- Boeing Collaboration
- Chevron/NREL
- Chevron/Solazyme
- Royal Dutch Shell/HR Biopetroleum
- General Atomics/CEHMM

Venture Capital investment:

- \$211 M (2007 – 2008)

Microalgae the only biofuel that could replace imported oil

# Competitive Landscape



# EG Business Strategy

## Microalgae-Derived Oils

EG develops high-productivity strains



## Licenses

- Standardized and custom strains for biodiesel producers
- Revenues from milestones and royalties

## Plant-Derived Fuels

EG identifies natural genes to boost yields of feedstocks



## Strategic alliances

- Seed company partners develop and market seed
- Revenues from research support, milestones, and royalties

# Financing

- EG founded in 2000
- \$7.7 million raised to date; \$18 M post-money valuation
- Series A investors: Altira Group
- Seeking Series B financing: \$10 M
- M&A exit within 3 years

# Use of Proceeds

Energy Project	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
<b><u>On-going projects:</u></b>									
<b>Algal oil production strains</b>	Yellow	Blue	Blue	Blue	Red	Red	Red	Red	Red
<b>Rice grain yield genes</b>	Blue	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
<b>Corn grain yield genes</b>	Yellow	Blue	Blue	Blue	Blue	Blue	Blue	Yellow	Yellow
<b>Corn starch/oil genes</b>	Yellow	Yellow	Blue	Blue	Blue	Blue	Blue	Yellow	Yellow
<b><u>New Projects:</u></b>									
<b>Sorghum orthologs - allocation</b>	Yellow								
<b>Additional corn yield genes</b>		Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue	Blue
<b>Soybean oil genes</b>		Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue	Blue
<b>Camelina oil genes orthologs</b>			Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue

- Gene ID through initial validation
- Transgenic validation and testing
- Development and sale of commercial strains using validated EG genes
- Breeding/GM of commercial seed using validated EG genes

# Management and Advisors

## Founders/Officers/Management:

- Ginny Orndorff, President & CEO, *GenoPlex, NeXstar, Genex*
- Dr. Walter Messier, CTO
- Dr. Xiongxing "Peter" Cheng, *Syngenta*

## Board:

- Peter Edwards, *Altira Group*
- Kinney Johnson, *Sequel Venture Partners*
- Dr. Rich Jorgensen, *U. Arizona & iPlant Collaborative*
- Ken Collins, *Replidyne*

## Advisors:



# Achievements

## Technology

- Identified adapted genes for rice, corn, sorghum
- Demonstrated yield effects in rice and corn
- Initiated fast-track microalgae project

## Commercial

- Strategic alliance with RiceTec, Inc.
- Collaboration with major company in corn

## Intellectual Property

- Eight issued U.S. patents – platform and specific yield genes
- Applications filed globally



**There will be a spectrum of  
transportation fuels: EG adds value  
across this spectrum**

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President & CEO**

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