

# Energy Corn<sup>tm</sup> for Cellulosic Ethanol

**NREL Industry Growth Forum  
Denver, Colorado  
7 November 2007**

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Manhattan, Kansas 66502 · (785) 587-8200 · [www.edenspace.com](http://www.edenspace.com)

# Edenspace: A Track Record of Success

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- Improved crop feedstocks for cellulosic ethanol
- Superb development team includes NREL, USDA, ICM, KSU, MSU, and OSU
- \$2.8 million in U.S. Department of Energy funding with large downstream opportunities
- \$2.5 million founder investment
- \$10 million 2007 Series A funding round relocates and expands the company and funds Energy Corn™ development
- Strategic partner Series B round planned for Fall 2008

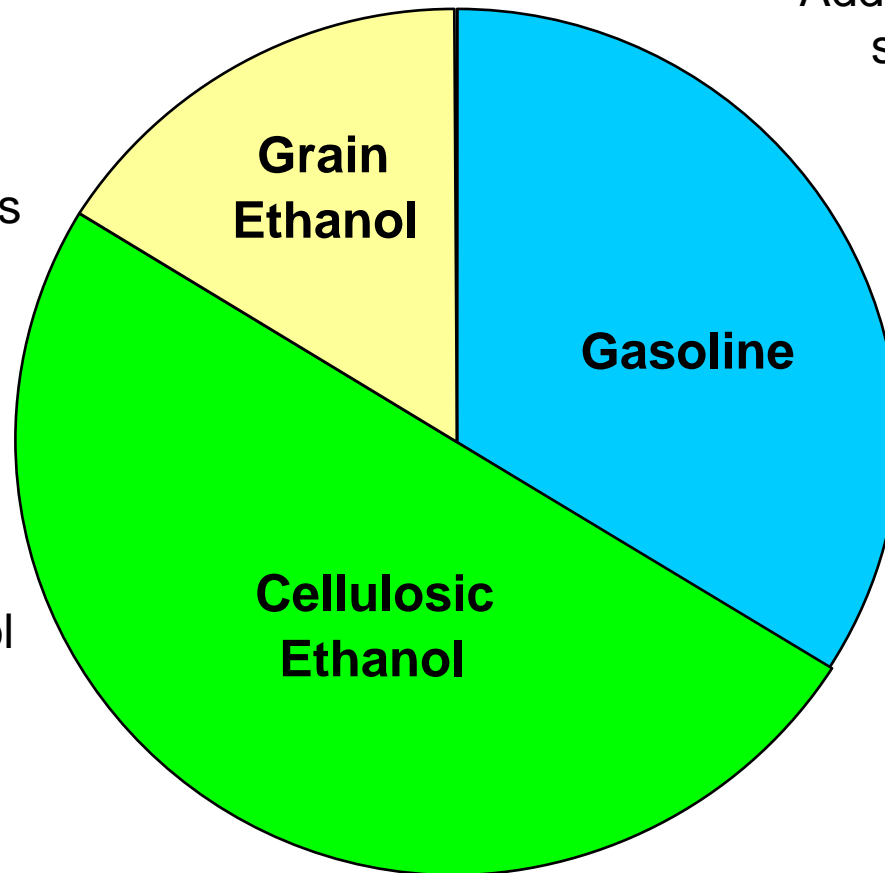


# The Opportunity

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U.S. annual  
transportation  
fuel demand:  
180 billion gallons

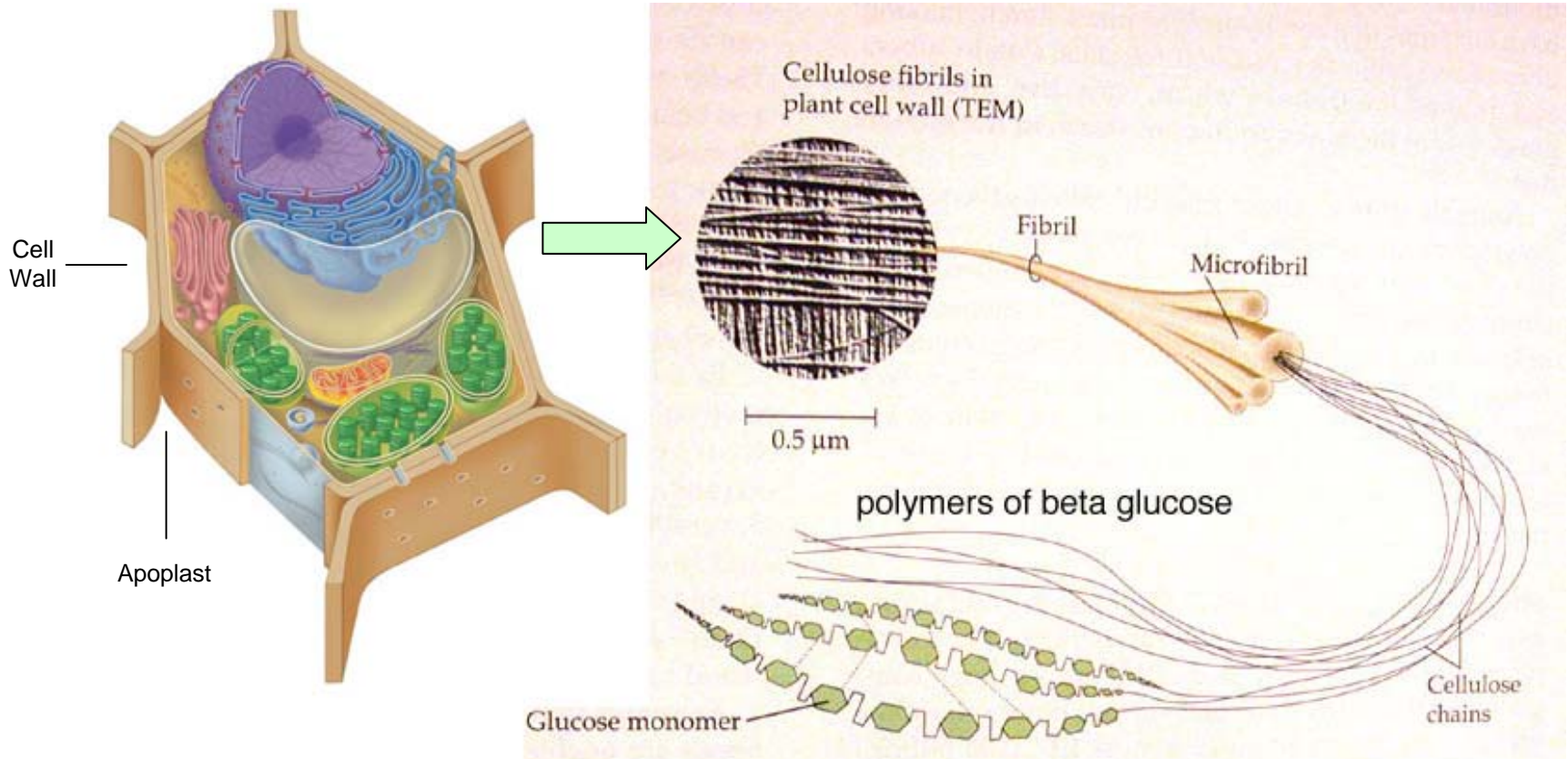
Addressable market for  
seed and traits:  
\$8 billion



Potential  
cellulosic ethanol  
market share:  
>50%

# Stored Energy in Plants

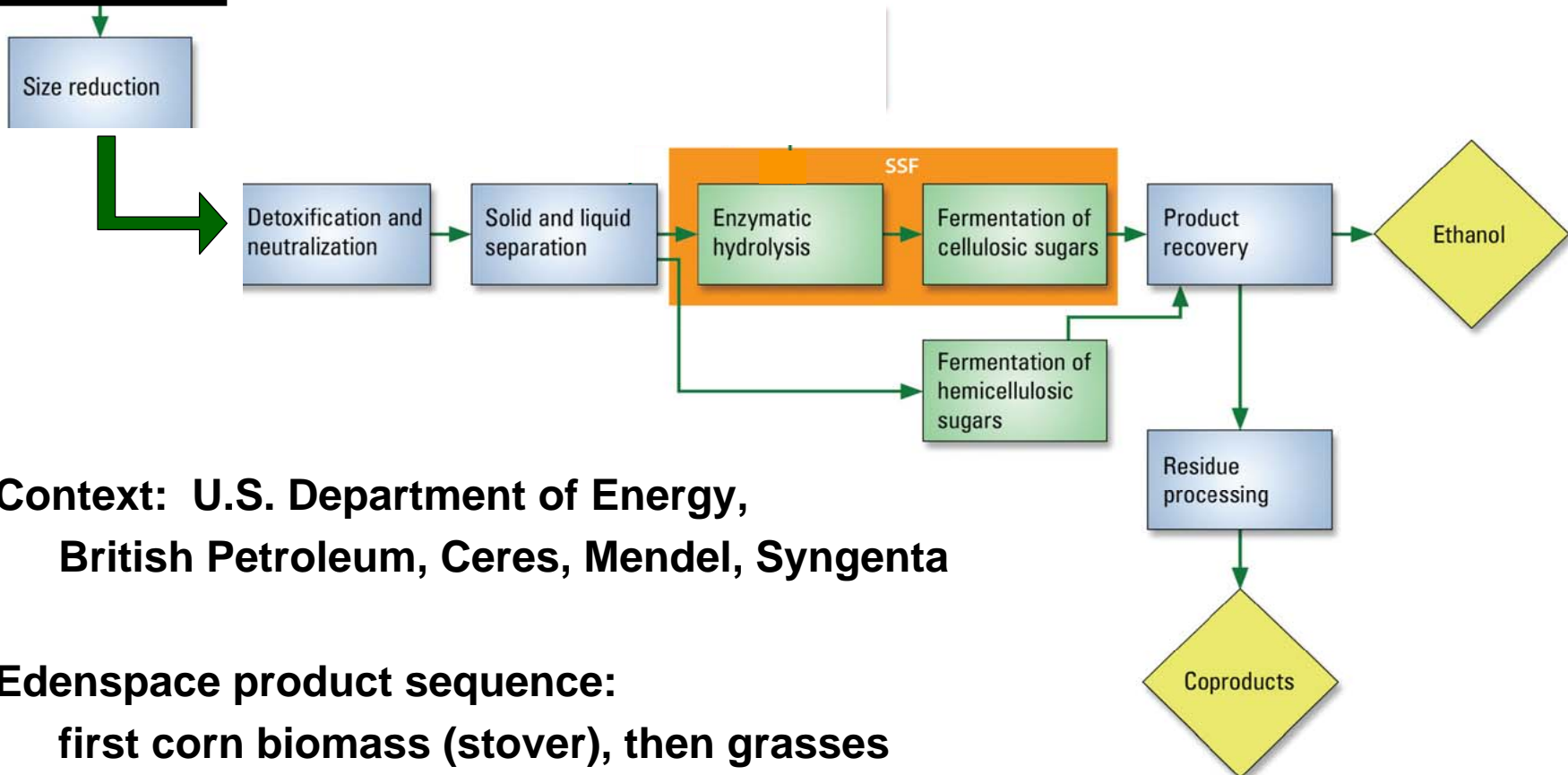
Cellulose makes up most of the cell wall, but is well-protected.



# Improved Crops for Lower-Cost Ethanol

**Biomass**

*Tailor crop feedstocks to reduce cellulosic ethanol processing costs by \$1.20/gallon*

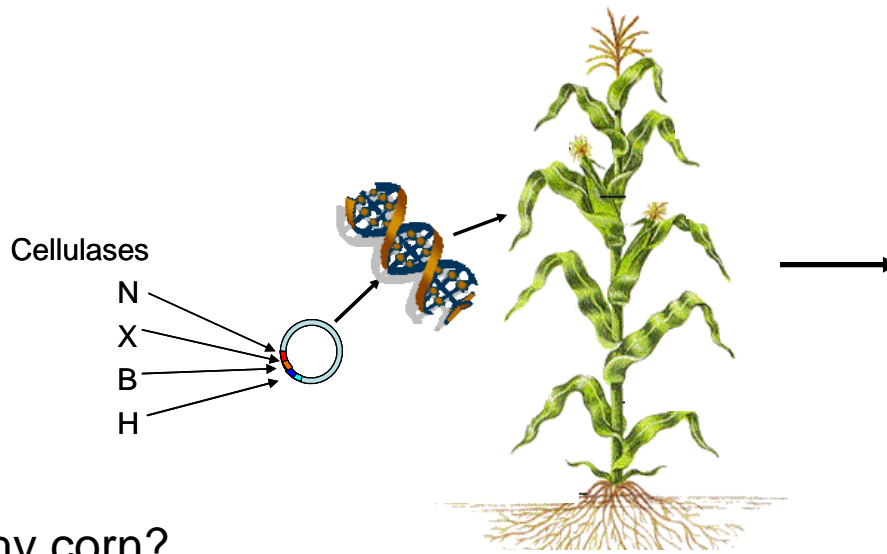


**Context: U.S. Department of Energy,  
British Petroleum, Ceres, Mendel, Syngenta**

**Edenspace product sequence:  
first corn biomass (stover), then grasses**



# Energy Corn™ Design



## Why corn?

- Plug-compatible with current \$10B corn grain ethanol industry
- Easy and safe to breed and grow
- Can be improved every year

# Superb Technical Results

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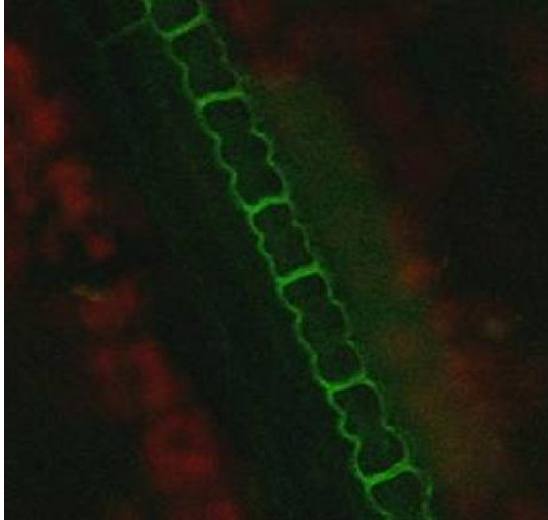


Photo courtesy of M. Sticklen

Targeted enzyme expression and activity



2006 Edenspace field trial



Excellent plant health

# Edenspace Competitive Advantages

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- Potential competitor-customer-partners
  - Enzyme suppliers (e.g., Novozymes, Genencor)
  - Agbiotech companies (e.g., Syngenta, Monsanto, DuPont; Ceres)
- Edenspace competitive advantages
  - Strong technical results, intellectual property
  - Compelling market sequence strategy starting with corn
  - Top industry/government/university development team
  - Location in “Biofuels Belt”



# Experienced Energy Corn™ Team

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- **Chairman, President, CEO** Bruce W. Ferguson. Co-founder and former COO, Orbital Sciences Corporation (NYSE: ORB)
- **VP, Systems Engineering** Dr. Michael J. Blaylock. Former Laboratory Director, Phytotech; Postdoc, Rutgers University; PhD U. Maryland
- **VP Finance and CFO** Wayne E. Mayhew III. Former CFO, Etex; CFO, Creative Biomolecules; accountant, Deloitte & Touche. CPA
- **Director, Molecular Biology** Dr. David A. Lee. Former AAAS Fellow, USEPA, transgenic plant regulation. PhD U.C. San Diego
- **Director, Crop Engineering** Dr. Ramesh B. Nair. Formerly at Iowa State U. Dep't of Plant Biology; Pioneer Hi-Bred; Purdue University. PhD U. Saskatchewan
- **Director, Corn Transformation** Martha C. Wright. (PT) Headed plant transformation at Syngenta; formerly at Monsanto
- **Manager, Crop Breeding** Curtis C. Wiltse. Former Seed Quality Lead & Corn Breeding Associate, Monsanto

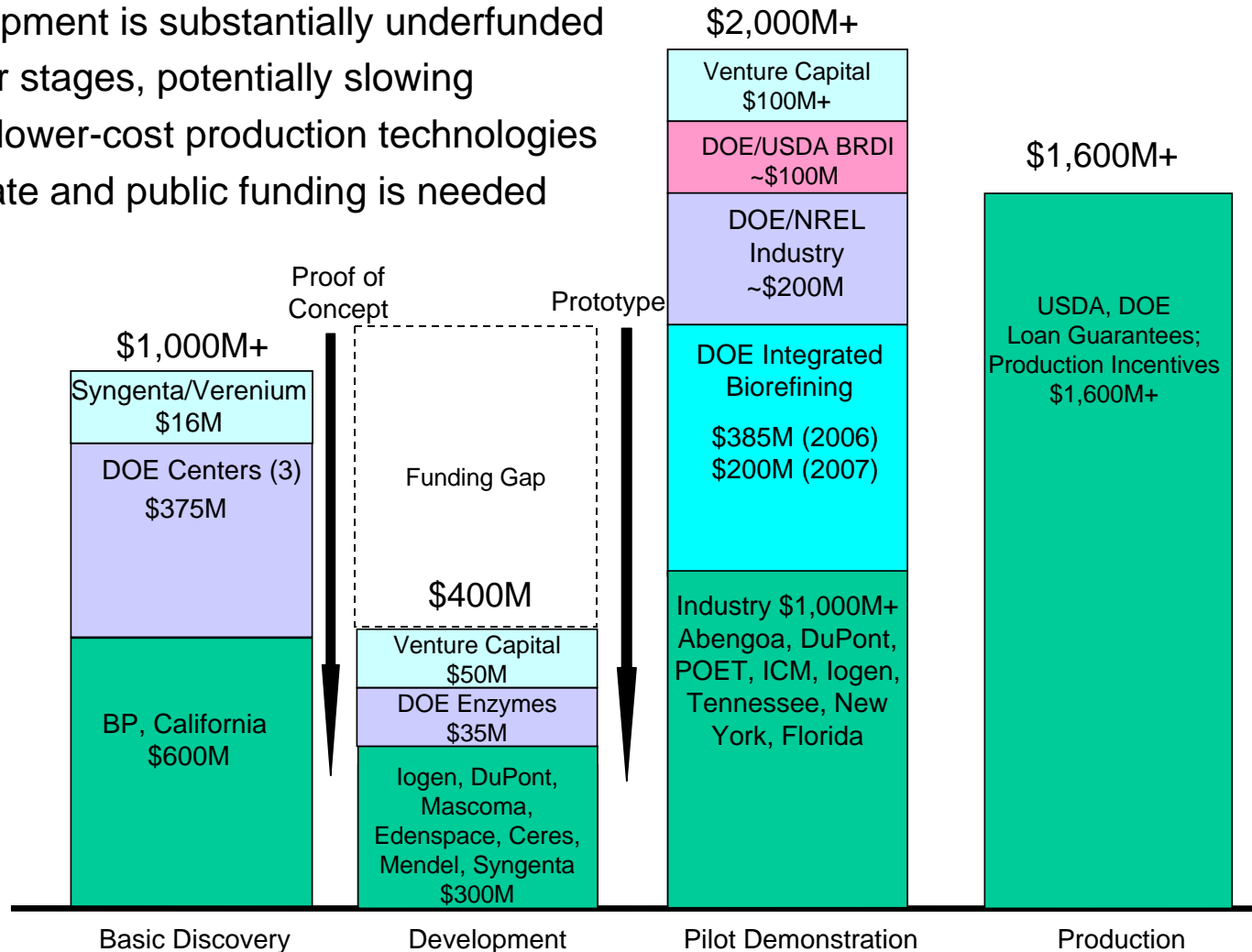
# Energy Corn™ Team (cont.)

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- **Outside Directors**
  - Adm. Richard H. Truly Former Director, NREL
  - Dr. Harrison H. Schmitt Former U.S. Senator and energy author
  - Mr. Kenneth Frahm Kansas farmer and State Energy Council Co-Chair
- **Technology Advisory Board:** Vicki Chandler (corn genetics), Bruce Dale (biomass pretreatment)
- **Collaborating Institutions:** DOE-NREL, USDA-ARS, ICM, Inc., Kansas State University, Michigan State University, Oklahoma State University,

# “Valley of Death” for Cellulosic Ethanol

- Product development is substantially underfunded relative to other stages, potentially slowing introduction of lower-cost production technologies
- Additional private and public funding is needed



# Edenspace 2008 Milestones

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- DOE Integrated Biorefinery Grant Awards (February)
- Phase B Design Review (June)
- Strategic Partnership, Series B Funding Round (Fourth Quarter)



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