The Institute for Massachusetts Biofuels Research - TIMBR

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Enabling the emerging biofuels industry through
- Research
- Innovation
- Workforce development
- Industrial outreach
TIMBR Research Groups

Microbiology & Biotechnology
- Scott Auerbach, Chemistry; Shaw Ling Hsu, Polymer Sci & Engin; George Huber, Curt Conner, David Ford, Phil Westmoreland, Chemical Engineering
- Om Parkash, Stephen Herbert, Randall Prostak, David Damery, PSIS; Danny Schnell, Jennifer Normanly, BMB; Tobias Baskin, Elsbeth Walker, Magdalena Bezanilla, Sam Hazen, Biology,
- Michael Henson, Michael Malone, Robert Huss, Dimitrios Maroudas, TJ Mountziaris, David Ford, Chemical Engineering

Biomass
- Matthew Kelty, Paul Barten, Natural Resource Conservation; Erin Baker, Mechanical and Industrial Engineering

Biomass → Biofuels
- Economic and Environmental Assessment
- Process Engineering

Plant Biotechnology & Agronomy
- Susan Leschine, Jeff Blanchard, Jim Holden, Micro; Lynne McLandsborough, Food Science

Chemical Catalysis
US Biofuel Production has Expanded Rapidly

AS OF: March 2006

Courtesy of C. Somerville
US Biomass inventory = 1.3 billion tons

From: Billion ton Vision, DOE & USDA 2005

Courtesy of C. Somerville
The Institute for Massachusetts Biofuels Research (TIMBR)

RESEARCH
The Biofuels R&D Laboratory

- Process Engineering and Design
- Biological Conversion
- Integrated Catalytic Conversion
- Economic and Environmental Analysis
- Biofuels and Bioproducts

Biomass Production
Biomass Production

Identification and Optimization of Biomass Traits in Perennial Grasses
   Walker, Hazen, Bezanilla, Baskin (Biology)
   Normanly, Schnell (Biochemistry and Molecular Biology)

Development of Non-food Oil Seed Plants for Biodiesel Production
   Parkash, Herbert (Plant Soil and Insect Sciences)

Agronomics and Resource Economics
   Herbert, Prostac (Plant Soil and Insect Sciences)
   Damery, Barten (Natural Resource Conservation)
Consolidated bioprocessing (CBP) technology for cellulosic ethanol production
Leschine, Blanchard, Holden (Microbiology)
McLandborough (Food Science)

Chemical catalyst theory/modeling, synthesis, characterization performance testing and separations
Conner, Ford, Huber (Chemical Engineering)
Auerbach (Chemistry)
Process Design, Economics & Sustainability

Process Design Engineering
Henson (Chemical Engineering)

Economics and Socio-economics of Biofuels Development
Baker (Mechanical and Industrial Engineering)

Sustainable Forest Management, Wildlife Conservation Economics, and Forest Products Marketing and Economics
Damery (Natural Resource Conservation)
Co-Directors

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