

Growing the Bioeconomy

FROM FOUNDATIONAL SCIENCE TO SUSTAINABLE PRACTICE

CONFERENCE AGENDA

Sunday, September 7

6:30–8:30 p.m.
7:00 p.m.

Welcome Reception and Registration

Plenary: **Midwest Agriculture, Energy, and Climate: The Path Forward**

Stephanie Herseth Sandlin U.S. Representative, State of South Dakota
Bill Northey Iowa Secretary of Agriculture

Monday, September 8

7:15–8:00 a.m.
8:00 a.m.
8:15 a.m.–12:30 p.m.
12:30 p.m.
1:30–4:40 p.m.

Registration

Opening Remarks

Point / Counterpoint Plenary Sessions

Luncheon

Technology Tours

THERMOCHEMICAL BIOMASS PROCESSING TOUR Iowa State University campus and BECON facility
Gasification, fast pyrolysis, syngas Fermentation; bio-oil and bio-char characterization and utilization
BIOMASS CROPS AND SOILS TOUR New Century Farm
On-site annual, perennial, and woody biomass crops; discussion of effects of biomass production on soil fertility
BIOMASS HARVEST, STORAGE, TRANSPORTATION RESEARCH TOUR New Century Farm
Experimental harvesting machinery, latest data on corn residue harvesting, research on storing and transporting biomass to biorefineries, research on recycling nutrients from bioprocessing back to the land

5:00 p.m.

Introduction of Midwest Governors Energy and Climate Platform

Reception and Ceremonial Groundbreaking—Biorenewables Research Laboratory

Chet Culver Governor, State of Iowa (invited)
Gregory L. Geoffroy President, Iowa State University
Robert C. Brown Director, Iowa State University Bioeconomy Institute
Other state leaders

Tuesday, September 9

8:00 a.m.
10:00 a.m.
11:30 a.m.–1:00 p.m.
1:00 p.m.
3:00 p.m.
4:30 p.m.
6:30 p.m.

Breakout Session 1 (detailed on reverse)

Breakout Session 2 (detailed on reverse)

Lunch, Exhibits, Poster Sessions

Breakout Session 3 (detailed on reverse)

Breakout Session 4 (detailed on reverse)

Adjourn

Post-Conference Workshop: Dinner and Plenary Session

Wednesday, September 10

8:15 a.m.

Post-Conference Workshop



The 2008 Biobased Industry Outlook Conference is committed to the mission of sustainability. Conference materials are printed using soy ink and recycled materials. Our goal is to encourage, promote, and actively participate in the worldwide movement to reduce environmental impact and increase social responsibility.

Register at www.bioeconomyconference.org

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Plenary Session Speakers

Point / Counterpoint

Biological Conversion of Biomass

Charles Wyman

Wyman will discuss the advantages and promise of biological conversion of biomass. He is the Ford Motor Company Chair in Environmental Engineering at the University of California at Riverside. His career has been devoted to the advancement of technology for biological conversion of cellulosic biomass to ethanol and other products that will reduce our excessive dependence on petroleum.



Why Corn Will Remain the Primary Ethanol Feedstock for the Next 10 Years in the United States

Theodore M. Crosbie

Crosbie will discuss technical and political reasons corn will remain the primary feedstock for biofuels for the foreseeable future. He is vice president of the foreseeable future. He is vice president of global plant breeding of the Monsanto Agriculture Sector. He is responsible for seven crops worldwide and is a member of the Monsanto Advisory Committee and the Technology Leadership Team. He has provided broad strategic impact in Monsanto through scientific leadership.



Biofuels: Helping Mitigate Global Climate Change

Stephen P. Long

Long will defend the merits of biofuels for CO₂ reduction. He is the University of Illinois Robert Emerson Professor and chief and founding editor of *Global Change Biology*. His research focuses on mechanisms of crop responses to global atmospheric change. He has also worked with low-input perennial bioenergy feedstocks for over 20 years in the EU and US. He is deputy director of the new Energy Biosciences Institute focused on improved sustainability of cellulosic biofuels.



Thermochemical Conversion of Biomass

John R. Regalbuto

Regalbuto will discuss the merits of thermochemical conversion of biomass to biofuels and bioproducts. As a professor of chemical engineering at the University of Illinois at Chicago, his research includes fundamental studies of catalyst preparation, absorption theory, catalyst characterization, and engineering ethics and education.



Why the United States Biofuels Industry Will Transition to Polycultures and Perennials

G. David Tilman

Tilman will discuss the benefits of transitioning to a biologically diverse system of biomass feedstocks to supply the bioeconomy and to provide other ecosystem services for society. He is Regents Professor of Ecology and holds the McKnight University Presidential Chair in Ecology at the University of Minnesota. He is an experimental mathematical ecologist studying the impacts of the loss of biological diversity and of other types of human-driven global change.



Biofuels Increase Greenhouse Gases through Emissions from Land Use Change

Timothy D. Searchinger

Searchinger recently published a thought-provoking piece in *Science Express* challenging the purported benefits of biofuels for CO₂ mitigation. He is a visiting scholar and lecturer in public and international affairs at Princeton's Woodrow Wilson School. Though he was trained as a lawyer, he now works primarily on interdisciplinary environmental issues related to agriculture. Searchinger is also writing a book about the interaction of agriculture and the environment.



Growing the Bioeconomy

From Foundational Science to Sustainable Practice



September 7–10, 2008

Scheman Building
Iowa State University
Ames, Iowa

Conference Goals

- Coalesce Midwest land-grant institution faculty and staff around energy and climate priorities identified by the Midwest Governors Coalition (MGC), North Central Bioeconomy Consortium (NCBC), North Central Sun Grant (NCSG), and USDA Energy Research Education and Extension.
- Advance the use of biorenewable resources for the production of chemicals, fuels, materials, and energy to achieve economic growth and prosperity while significantly reducing greenhouse gas emissions.
- Advance new crop systems that increase the supply and quality of biobased feedstocks while improving water quality, soil quality, air quality, and wildlife habitat.
- Provide a venue to "strengthen the core"; directly address strategies to improve environmental and social profile of existing biorefineries and develop sustainable systems for next-generation biorefineries.
- Advance the Midwest as the preeminent bioeconomy research, development, and commercialization region of the United States.

www.bioeconomyconference.org



University Conference Services
102 Scheman Building
Ames, IA 50011-1112



Growing the Bioeconomy

From Foundational Science to Sustainable Practice

September 7–10, 2008

Iowa State University - Ames, Iowa

To register
www.bioeconomyconference.org

IOWA STATE UNIVERSITY
Bioeconomy Institute

Tuesday, September 9 . . . Breakout Sessions



Post-Conference Workshop Corn and Climate



Tuesday evening, September 9, and Wednesday, September 10
Iowa State University, Ames, Iowa

Co-organized by the National Oceanic and Atmospheric Administration, Iowa State University Bioeconomy Institute, Iowa State University Climate Science Initiative, and North Central Bioeconomy Consortium

Wednesday, September 10

Concern about global food production in an era of expanding requirements for biofuels feedstocks, as well as long-term climate change, call for renewed attention to weather and climate for the Midwest farming region. Volatility in global food and energy markets may be substantially exacerbated by increased variability and agriculturally adverse climate trends around the globe.

This workshop will focus on needs for new climate knowledge and opportunities for more effective use of existing knowledge for agriculture in the Midwest "corn belt." Topics will include:

- Climate change projections for the United States Midwest
 - Monitoring and data
 - Drought projections
 - Extreme events
 - Water availability, runoff, streamflow, and flooding
- Potential for Midwest agriculture to adapt to climate variability and change
- Use of short- and long-term climate forecasts to assist decision making under conditions of uncertainty

For more information,
please contact workshop
chair Gene Takle
(gstakle@iastate.edu).

Workshop organizers will produce a report on the interface of biofuels and climate change using presentations and discussion from the workshop.

Tuesday, September 9

6:30 p.m. Dinner
8:00 p.m. Observed and Projected Changes in Climate for North America
Dave Easterling, Senior Scientist, National Climatic Data Center/NOAA

2008 Conference Sponsors

PLATINUM	KEYNOTE/TRACK OR RECEPTION	GOLD
Alliant Energy	Iowa State University Center for Crops Utilization Research	BIOWA
ConocoPhillips	Iowa State University Climate Science Initiative	Grain Processing Corporation
Iowa Power Fund	Iowa State University College of Agriculture and Life Sciences	Iowa Farm Bureau Federation
Iowa State University Bioeconomy Institute	Iowa State University Extension / CIRAS	Iowa State University Institute for Physical Research and Technology
Iowa State University Plant Sciences Institute	John Deere	
Monsanto		
North Central Bioeconomy Consortium		
Pioneer Hi-Bred, a DuPont business		

We extend our sincere appreciation to these sponsors who committed early (before the printing of this brochure). We urge you to check for updates to this list on the conference Web site: www.bioeconomyconference.org/08sponsors.html.

8:00 a.m.

FEEDING THE DRAGON

Genetics, Genomics, and Fundamental Aspects of Plant Breeding

- Joe Bouton** Senior Vice President and Director, Forage Improvement Division, The Samuel Roberts Noble Foundation
- Bill Hitz** Senior Research Fellow, Department of Biochemical Sciences and Engineering, DuPont
- Cory Christensen** Switchgrass Product Manager, Ceres, Inc.

BIOMASS PROCESSING

New Advances in Chemical Processing of Biomass

- Randy Cortright** Chief Technology Officer, Virent
- Lanny Schmidt** Regents Professor, Chemical Engineering/Materials Science, University of Minnesota
- Brent Shanks** Professor, Chemical and Biological Engineering Iowa State University

UTILIZATION OF BIOBASED PRODUCTS

Opportunities to Enhance Ethanol Co-Products and Develop New Uses

- Vijay Singh** Professor, Agricultural and Biosystems Engineering Iowa State University
- Tong Wang** Associate Professor, Food Sciences and Human Nutrition, Iowa State University
- Doug Rushing** Director of Public and Government Affairs, Resenon

ECONOMICS AND POLICY

Federal Biofuel Policy: The Congressional Perspective

- Stephanie Mercier** Economist, Senate Agricultural Committee
- Anne Simmons** (invited) Staffer, House Agricultural Committee

BIOFUELS AND CLIMATE CHANGE

Global/U.S. Climate Change and Impacts on Agriculture

- Bill Easterling** Dean, College of Earth and Mineral Sciences Pennsylvania State University
- Jerry Hatfield** Director, National Soil Tilth Lab, USDA ARS

HUMAN, SOCIAL, COMMUNITY

Community Cohesion/Participation

- Cornelia Flora** Distinguished Professor, Sociology Iowa State University
- Leann Tigges** Professor and Chair, Rural Sociology University of Wisconsin–Madison
- Carmen Bain** Assistant Professor, Sociology Iowa State University

10:00 a.m.

FEEDING THE DRAGON

Moving from Lab to Reality: Field-Based Plant Improvement

- Kendall Lamkey** Professor and Chair, Agronomy Iowa State University
- Rob Mitchell** USDA ARS, University of Nebraska
- Aaron Schuchart** Vice President, Corporate Development and Strategy, Mendel Biotechnology

BIOMASS PROCESSING

New Advances in Biological Processing of Biomass

- Jim Zahn** Director, HTS Strain and Fermentation Development Coskata, Inc.
- Alan Dispirito** Associate Professor, Biochemistry, Biophysics, and Molecular Biology, Iowa State University
- Paul Bloom** Research Manager Archer Daniels Midland Company

UTILIZATION OF BIOBASED PRODUCTS

Utilizing Feed Co-Products from Biofuel Plants

- Steve Ensley** Clinician, Veterinary Diagnostic and Production Animal Medicine, Iowa State University
- Ronald Belyea** Professor Emeritus, Division of Animal Sciences University of Missouri
- Francis Fluharty** Associate Professor, Animal Sciences Ohio State University

ECONOMICS AND POLICY

Federal Biofuel Policy: The Academic and Industry Perspectives

- Seth Meyer** Research Assistant Professor, Food and Agricultural Policy Research Institute, University of Missouri
- Wallace Tyner** Professor, Agricultural and Applied Economics, Purdue University
- Brian Jennings** Executive Vice President American Coalition for Ethanol

BIOFUELS AND CLIMATE CHANGE

Carbon Cycle and Biofuel Production: Changing the Climate

- Rick Cruse** Professor, Agronomy, Iowa State University
- Dev Niyogi** Indiana State Climatologist

HUMAN, SOCIAL, COMMUNITY

Community Sustainability and Risk

- Randall Fortenbery** Professor, Agribusiness and Applied Economics, University of Wisconsin–Madison
- Shashi Nambisan** Director, Center for Transportation Research and Education, Iowa State University
- Jim Kleinschmit** Rural Communities Director Institute for Agriculture and Trade Policy

1:00 p.m.

FEEDING THE DRAGON

Production Systems That Feed the Dragon and Provide Environmental Services

- Richard Hess** Biomass Program Technology Manager Idaho National Laboratory
- Sylvie Brouder** Professor of Agronomy, Purdue University
- Matt Liebman** Henry A. Wallace Chair for Sustainable Agriculture, Iowa State University

BIOMASS PROCESSING

Chemistry Approaches

- Patricia Shapley** Professor, Chemistry University of Illinois–Urbana
- Joseph Bozell** (invited) Associate Professor, Biomass Chemistry, University of Tennessee
- Victor Lin** Professor, Chemistry, Iowa State University

UTILIZATION OF BIOBASED PRODUCTS

Performance of Biofuels and Biolubricants

- Lou Honary** Director and Pioneer Hi-Bred Professor of Innovation, National Ag-Based Lubricants Center
- David Kittelson** Professor, Mechanical Engineering University of Minnesota
- Candace Wheeler** GM Technical Fellow GM Research and Development Center

ECONOMICS AND POLICY

The Midwest Governors Coalition Platform

- Jesse Heier** Director, Midwest Governors Coalition The Council of State Governments
- Charles Griffith** Clean Car Campaign Director, Ecology Center
- Mike Doherty** Senior Economist and Policy Analyst Illinois Farm Bureau

BIOFUELS AND CLIMATE CHANGE

Coupled Crop/Climate Modeling

- Zaitao Pan** Associate Professor, Earth and Atmospheric Sciences, St. Louis University
- Chuck Rice** Professor and Director, Soil Carbon Center Kansas State University
- David Miller** Director of Research and Commodity Services Iowa Farm Bureau Federation

HUMAN, SOCIAL, COMMUNITY

Measuring Local Impact/Models

- David Peters** Professor, Agricultural Economics University of Nebraska
- Nancy Hodur** Research Scientist, Agribusiness and Applied Economics, North Dakota State University
- Dave Swenson** Associate Scientist, Department of Economics Iowa State University

3:00 p.m.

FEEDING THE DRAGON

Harvest, Storage, and Transportation Systems for Cobs

- Norm Peiffer** CornCob Products, The Andersons
- Reed Mayberry** Biomass Manager, Project Liberty POET (invited)
- Mark Chaney** Senior Engineer, John Deere Harvester Works
- Steve McGrew** McGrew Brothers Farms

BIOMASS PROCESSING

Pyrolysis Co-Products: Bio-oil and Bio-char

- Wolter Prins** Professor, University of Ghent
- Robert C. Brown** Distinguished Professor, Mechanical Engineering, Iowa State University
- David Laird** Soil Scientist, USDA ARS

UTILIZATION OF BIOBASED PRODUCTS

New Opportunities for Value-Added Biomaterials as Biofuel Co-Products

- Chris Williams** Associate Professor, Civil, Construction, and Environmental Engineering, Iowa State University
- Richard Wool** Professor, Chemical Engineering University of Delaware
- Stephen Myers** Director, BioProducts Innovation Center The Ohio State University

ECONOMICS AND POLICY

Biofeedstock Availability and Cost

- Larry Liestriz** Professor, Agribusiness and Applied Economics, North Dakota State University
- Ron Barmore** Director, Project Development, Range Fuels, Inc.
- Steve Flick** Show Me Energy

BIOFUELS AND CLIMATE CHANGE

Carbon Sequestration Opportunities with Biofuel Feedstock Production Practices

- Ken Cassman** Professor of Agronomy, University of Nebraska
- Chuck Rice** Professor and Director, Soil Carbon Center Kansas State University
- David Miller** Director of Research and Commodity Services Iowa Farm Bureau Federation

HUMAN, SOCIAL, COMMUNITY

Distribution of Benefits and Costs of the Bioeconomy across Generations

- J. Gordon Arbuckle** Assistant Professor, Sociology Iowa State University
- Mark Drabenstott** (invited) Director, Center for Regional Competitiveness, Rural Research Policy Institute

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Conference Planning Team

IOWA STATE UNIVERSITY MEMBERS	Julie Kieffer Program Manager	PARTNERING AGENCIES/GROUPS
Jill Euken (Chair) Deputy Director, Bioeconomy Institute; Project Manager, ISU Extension/Industrial Center for Research and Service	George Kraus Director, Institute for Physical Research and Technology	Jim Doolittle NC Sun Grant (SDSU)
Robert C. Brown Director, Bioeconomy Institute	Tonia McCarley Business Manager, Bioeconomy Institute	Dick Hemmingson University of Minnesota, IREE
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		Donald Mock National Oceanic and Atmospheric Administration
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