

WEDNESDAY FEBRUARY 4, 2015

11:45-1:30pm Lunch on your own

Session 4A:

System Sustainability

1:30-1:55 **Virginia Dale** **Oak Ridge National Laboratory**
Landscape Design Approach for Assessing Sustainability of Pellet Production from Southeast United States Forest Residues

1:55-2:20 **John Schelhas** **USDA Forest Service**
"Weaving Straw into Gold": Perceptions of the Social, Ecological, and Economic Sustainability of Wood Based Bioenergy in the Rural U.S. South

2:20-2:45 **Esther Parish** **Oak Ridge National Laboratory**
Assessment of the Overall Environmental and Socioeconomic Sustainability of the Vonore, Tennessee Switchgrass-to-Ethanol Production System

2:45-3:15pm Networking Break

3:15-3:40 **Puneet Dwivedi** **University of Georgia**
Do Markets for Forest Carbon and Wood-Based Energy Products Always Save Carbon?

3:40-4:05 **Amanda Ashworth** **University of Tennessee**
Enhancing the Sustainability of Lignocellulosic Feedstock Production Systems in the Southeast and Under Intensified Climatic Change

4:05-4:30 **Kurt Krapfl** **Mississippi State University**
Soil Resource Dynamics of a Loblolly Pine-Switchgrass Intercropping System

4:30-4:55 **William Hubbard** **University of Georgia**
Extension and Outreach Efforts in Support of Creating a Sustainable Forestry & Agriculture Biomass Economy in the Southern United States

Session 4B:

Woody/Herbaceous Engineering Operations

1:30-1:55 **Lance Stewart** **Genera Energy Inc.**
Building Successful Feedstock Logistical Systems

1:55-2:20 **John Klepac** **USDA Forest Service**
Results of Transpirational Drying of Loblolly Pine at Roadside and in Bunches at Multiple Locations in South Alabama

2:20-2:45 **Jonathan Kenney** **Auburn University**
Factors that Affect Fuel Consumption in Logging Systems

2:45-3:15pm Networking Break

3:15-3:40 **Daniel de Souza** **Auburn University**
Determining the Impact of Felling Method and Season of Year on Coppice Regeneration

3:40-4:05 **Oladiran Fasina** **Auburn University**
Physical Characteristics of Short Rotation Woody Biomass

4:05-4:30 **Francisco Gomez** **Texas A&M University**
A Biomechanical Approach to Quantify Lodging in Sweet Sorghum for Biofuels

4:30-4:55 **James Larson** **University of Tennessee**
Effect of Particle Size and Bale Wrap on Storage Losses and Quality of Switchgrass

WEDNESDAY FEBRUARY 4, 2015

Conference Dinner and Keynote Speaker

6:30-8:30pm - Dinner

Mark Windham **University of Tennessee** - The Southeastern Conference: Its Roots and Traditions

Sponsored By:



CENTER FOR BIOENERGY
AND BIOPRODUCTS



 **SunGrant**
INITIATIVE
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2015 SUN GRANT CONFERENCE

Auburn, Alabama February 2 - February 4



Program Committee Members

Rodney Andrews
University of Kentucky

Todd French
Mississippi State University

Steve Kelley
North Carolina State University

Liam Leightley
Virginia Tech

Dana Mitchell
USDA Forest Service

Timothy Rials
University of Tennessee

Steve Taylor
Auburn University



CONFERENCE SCHEDULE

MONDAY FEBRUARY 2, 2015

2:00 - 5:00pm Pre-Conference Tour

TUESDAY FEBRUARY 3, 2015

7:30-8:00am Breakfast and Welcome

Plenary Session:

- 8:00-8:05
- Timothy Rials
- Director, Center for Renewable Carbon, University of Tennessee - Welcome and Opening Remarks
- 8:05-8:10
- Timothy Boosinger
- Provost and Vice-President for Academic Affairs, Auburn University - Welcome to Auburn
- 8:10-9:00
- Derek Griffin
- Senior Development Engineer, LanzaTech - Carbon Recycling: Gas Fermentation for Fuel and Chemical Production

TUESDAY FEBRUARY 3, 2015

Session 1A:

Development of Energy Crops

- 9:00-9:25
- Wilfred Vermerris
- University of Florida
Next-Generation Sweet Sorghums for the Production of Fuels and Chemicals in the Southeastern United States
- 9:25-9:50
- Edzard van Santen
- Auburn University
Initial Results from the Switchgrass Breeding Program at Auburn University
- 9:50-10:15am Networking Break
- 10:15-10:40
- Terry Felderhoff
- University of Florida
Identification of Anthracnose Resistance Loci in Sorghum Bicolor
- 10:40-11:05
- Wegi Wuddineh
- University of Tennessee
Identification and Overexpression of Gibberellin 2-Oxidase (GA2ox) in Switchgrass (Panicum virgatum L.) for Improved Plant Architecture and Reduced Biomass Recalcitrance
- 11:05-11:30
- Andrew Damiani
- Auburn University
iAD 824: An Improved Genome-Scale Metabolic Network Model for Scheffersomyces Stipitis
- 11:30-11:55
- David Wright
- University of Florida
Brassica Carinata- A Winter Oilseed Crop for the Southern Farmer Producing a Novel “Drop-in” Biofuel

Session 1B:

Thermochemical Platform

- 9:00-9:25
- Stephen Kelley
- North Carolina State University
Evaluation the Reactivity of Woody Biomass with Pyrolysis Molecular Beam Mass Spectrometry (Py-MBMS)
- 9:25-9:50
- Sushil Adhikari
- Auburn University
Effect of Torrefaction on Biomass Chemistry and Hydrocarbons Production from Fast Pyrolysis
- 9:50-10:15am Networking Breaka
- 10:15-10:40
- Andrew Moore
- North Carolina State University
Advancements in Bio-Oil Aging Mechanisms
- 10:40-11:05
- Tom Elder
- USDA-Forest Service
Impacts of Inorganics on the Thermal Behavior of Switchgrass
- 11:05-11:30
- James Kastner
- University of Georgia
Continuous Catalytic Ketonization of Water Extracted Fast Pyrolysis Oils Using Iron Oxides
- 11:30-11:55
- Xianchun Zhu
- Mississippi State University
Development of Ni Based Catalysts for the Destruction of Tars Generated in the Biomass Synthesis Gas (syngas) Production Process

CONFERENCE LUNCH AND KEYNOTE SPEAKER

- 11:55-1:30pm Lunch
- Kelley Tiller
- Genera Energy Inc. - Surf’s Up! The Academic’s Guide to Surfing the Bioeconomy Wave

TUESDAY FEBRUARY 3, 2015

Session 2A:

Biomass Production and Logistics

- 1:30-1:55
- Ramesh Ravella
- North Carolina A&T State University
Nitrogen Management in Giant Miscanthus (GM) Biomass Production in Piedmont Region of North Carolina
- 1:55-2:20
- William Anderson
- USDA-ARS
Production of Energy Cane and Elephantgrass on Marginal Soils Using Winter Covers
- 2:20-2:45
- Dehai Zhao
- University of Georgia
Effects of Planting Density, Management, and Site on Loblolly Pine Biomass Production

2:45-3:15pm Networking Break

Session 2B:

Biochemical Platform

- 1:30-1:55
- Joseph Bozell
- University of Tennessee
Can the Biorefinery Survive Cheap Oil? Approaches to High Value Chemical Products from Carbohydrates and Lignin
- 1:55-2:20
- Consuelo Fritz
- North Carolina State University
The Effect of Oil-Water Microemulsion Pretreatment on Biomass Conversion
- 2:20-2:45
- Douglas Hayes
- University of Tennessee
Ionic Liquids for the Dissolution, Pretreatment, and Analysis of Lignocellulosic Biomass

2:45-3:15pm Networking Break

TUESDAY FEBRUARY 3, 2015

Session 2A:

Biomass Production and Logistics

- 3:15-3:40
- Kurt Krapfl
- Mississippi State University
Making the Case for Intercropping Loblolly Pine within Newly Established Switchgrass Stands
- 3:40-4:05
- Tim Rials
- University of Tennessee
Advancing Energy Crop Supply Systems in the Southeastern United States
- 4:05-4:30
- Solomon Ghezehei
- North Carolina State University
Implications of Density on Early Survival and Biomass Productivity of Populus Clones Grown on Marginal Lands
- 4:30-4:55
- Randall Rousseau
- Mississippi State University
Performance of Black Willow on Tests Sites in Mississippi

Session 2B:

Biochemical Platform

- 3:15-3:40
- Subramanian Ramakrishnan
- Florida A&M University
Solvent Based Pretreatment for Fractionation and Enhanced Enzymatic Hydrolysis of Lignocellulosic Biomass
- 3:40-4:05
- Han Qiang
- North Carolina State University
Fundamental Characteristics that Affect Enzymatic Digestibility of Autohydrolysis Pretreated Biomass
- 4:05-4:30
- Maobing Tu
- Auburn University
Redefine the Role of Lignin in Enzymatic Hydrolysis of Lignocellulosic Biomass
- 4:30-4:55
- Min Hea Kim
- Auburn University
A Novel Co-Culture System for Ethanolc Fermentation from Lignocellulosic Sugars

POSTER SESSION

5:30-7:30pm Conference Poster Session and Reception

WEDNESDAY FEBRUARY 4, 2015

7:30-8:00am Breakfast and Welcome

Session 3A:

Models and Metrics

- 8:00-8:25
- Laurence Eaton
- Oak Ridge National Laboratory
The 2016 Update to the U.S. Billion-Ton Biomass Assessment
- 8:25-8:50
- Carter Reeb
- North Carolina State University
Multi-Criteria Decision Making and Biomass Feedstock Supply Feasibility: How Does the Southeastern US Stack Up?
- 8:50-9:15
- Timothy Young
- University of Tennessee
Extending Web-Based Outreach Using the Biomass Site Assessment Tool (BioSAT)
- 9:15-9:40
- Edward Yu
- University of Tennessee
Economic Gains and Greenhouse Gases Emissions of a Biofuel Supply Chain in Tennessee
- 9:40-10:05
- Burt English
- University of Tennessee
Estimating the Cost of Feedstock for a Hypothetical Bio-Refinery: A Case Study in Mississippi

10:05-10:30am Networking Break

- 10:30-10:55
- Sudhagar Mani
- University of Georgia
GIS Based Assessment and Supply Logistics of Miscanthus Produced from Strip-Mined Lands
- 10:55-11:20
- Sandra Eksioglu
- Clemson University
Optimization Models in Support of Biomass Co-Firing in Coal-Fired Power Plants
- 11:20-11:45
- Guillermo Velarde
- North Carolina State University
Design and Development of a U.S. Logistics Models for Residential and Commercial Biomass Pellets

Session 3B:

Co-Products

- 8:00-8:25
- Nicole Labbé
- University of Tennessee
Developing an Integrated Biorefinery: Potentials of Switchgrass Extractives
- 8:25-8:50
- Richard Garrison
- Texas Tech University
Anti-Inflammatory Effects of Extracts from a Bioenergy Crop, Switchgrass, in Adipocytes
- 8:50-9:15
- Hailing Liu
- Florida State University
Lignin-Based Smart Materials
- 9:15-9:40
- David Harper
- University of Tennessee
Foams from Lignin
- 9:40-10:05
- Carlos Salas
- North Carolina State University
Integration of Lignin with Residual Soy Proteins in the Fabrication of Fiber Webs for Utilization in the Field

10:05-10:30am Networking Break

- 10:30-10:55
- Shuai Li
- North Carolina State University
Jet Fuels and Bitumen Emulsions Stabilized by Carboxymethylated Lignins: Effect on Combustion Efficiency and Emissions
- 10:55-11:20
- Yusuf Celikbag
- Auburn University
Pyrolysis Oil Substituted Epoxy Resin: Improved Ratio Optimization and Crosslinking Efficiency
- 11:20-11:45
- William Hand
- Auburn University
Microfibrillated Cellulose Reinforcement in Phenol Formaldehyde Wood Adhesive