Seventh Annual Southern BioProducts and Renewable Energy Conference

April 14-15, 2008
Silver Star Hotel & Casino
Pearl River Resort, Choctaw, MS

Hosted by the Mississippi Biomass Council

CONFERENCE PROGRAM

Mississippi Biomass Council, Inc.

The Mississippi Biomass Council, Inc. was created in 1998 and incorporated in 2000 as a 501(c)(6) nonprofit organization. The Mississippi Biomass Council offers a forum to share information for the purpose of assessing and communicating the available biomass resources within the state and supporting biomass technology development and utilization to actively produce products and methods which encourage biomass related economic development. Council members include representatives from agriculture, forestry, recycling, energy production, state and local government, higher education, research, manufacturing, and individuals interested in developing economic opportunities for biomass, increasing energy security, and reducing biomass waste streams.

The Mississippi Biomass Council is proud to serve as host of the Southern BioProducts and Renewable Energy Conference for the seventh consecutive year. The theme of this year's conference, "Building on the Strengths of Mississippi's Biomass Resources", was chosen to highlight the opportunities that Mississippi-based resources can contribute to the development of a bio-based industry in the Southern United States and to challenge state leaders and stakeholders to work together to develop a long-range plan to grow a vibrant industry sector in Mississippi focused on the utilization of our home-grown biomass resources.

2007-2008 MBC Executive Committee:

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Sumesh Arora, Immediate Past President
Mississippi Technology Alliance
Strategic Biomass Initiative

Seventh Annual Southern Bioproducts and Renewable Energy Conference
April 14-15, 2008
Silver Star Casino Pearl River Resort
Choctaw, Mississippi

AGENDA

Monday, April 14

8:30 am **Registration** Pre-function Lobby

8:30 am **Exhibit and Poster Set-Up** Ballroom

10:00 am **Opening Session** Meeting Room 1-5
Conference Overview – Brent Bailey, *State Facilitator, 25x`25 Initiative, Canton, Mississippi*
Welcome-Mayor John Robert Smith, *City of Meridian*

10:30 am **Opening Keynote Message** Meeting Room 1-5
Dr. Mark Jenner, *President, Biomass Rules, Greenville, Illinois*

11:00 am **Policymaker Forum** Meeting Room 1-5
Session Moderator: Brent Bailey, *State Facilitator, 25x`25 Initiative, Canton, Mississippi*
Speakers: Cade Clurman • Marie Thomas • Jim Lipe • Commissioner Brandon Presley
Senator Perry Lee • Representative David Norquist

12:00 pm **Luncheon/Keynote** Ballroom
Introduction: Dr. Vance Watson, *Interim President, Mississippi State University, Starkville, Mississippi*

"Grand Challenges and Great Opportunities for the Agricultural and Life Sciences"-
Keynote Speaker: Dr. Gale Buchanan
Under Secretary for Research, Education and Economic, United States Department of Agriculture, Washington, D.C.

1:30 pm **Biomass Feedstock Forum** Meeting Room 1-5
Session Moderator: Dr. Liam Leightley, *Interim Associate Research Director, Forest and Wildlife Research Center, Mississippi State University, Starkville, Mississippi*
Speakers: Wayne Tucker • Joe Bouton • Eugene Columbus

3:00 pm **Break with Exhibitors** Ballroom

3:30 pm **Biomass Harvest and Collection Forum** Meeting Room 1-5
Session Moderator: Sumesh Arora, *Director, Strategic Biomass Initiative, Mississippi Technology Alliance, Ridgeland, Mississippi*
Speakers: Dr. Christopher Wright • Dana Mitchell • Dr. James Rawlins

5:30 p.m. **Networking Reception/Student Poster Voting** Ballroom

Tuesday, April 15

7:15 am **Breakfast** Ballroom

8:00 am **From Conception to Construction** Meeting Room 1-5
Session Moderator: Dr. Les Goff, *President, Noetic Technologies, Hattiesburg, Mississippi*
Speakers: Sam Shepard • Stan Parton • Kenneth "Pete" Moss

9:00 am **Opportunities for a Bio-Based Economy** Meeting Room 1-5
Session Moderator: Marvin Burchfield, *Vice President, Decker Energy International, Winter Park, Florida*

9:30 am **Student Recognition Session** Meeting Room 1-5

9:40 am **Break with Exhibitors** Ballroom

10:00 am **Morning Keynote** Meeting Room 1-5
Session Moderator: Andy Whittington, *Environmental Programs Coordinator, Mississippi Farm Bureau Federation, Jackson, Mississippi*

Keynote Speaker: Dr. Eric Clark
Executive Director, Mississippi State Board of Community and Junior Colleges, Jackson, Mississippi

10:30 am **Woody Biomass Utilization in Mississippi** Meeting Room 1-5
Session Moderator: Dr. Glen Hughes, Extension Professor, *Mississippi State University Extension Service, Starkville, Mississippi*
Speakers: Dr. Donald Grebner • Dr. Philip Steele • Dr. Randy Rousseu

11:45 am **Wrap up and Closing Remarks** Meeting Room 1-5

12:00 noon **Mississippi Biomass Council Annual Meeting** Ballroom
Guest Speaker: Dr. Motice Bruce, Executive Director, *Mississippi Development Authority-Energy Division, Jackson, Mississippi*

ULTRA GREEN SPONSORS

Brunini, Grantham, Grower & Hewes, founded by John B. Brunini over a century ago, began as a small, collegial group of attorneys practicing law together. Today, Brunini has grown into one of Mississippi's largest and most respected law firms. We serve primarily business clients, including a number of Fortune 500 companies and other significant Mississippi companies, including the nation's largest privately held wireless company, Mississippi's largest health insurer, and one of the state's largest banks and largest health care systems. Our firm's practice is organized into three major areas of concentration: Commercial, Litigation and Regulatory law.

Copeland, Cook, Taylor & Bush, P.A. Copeland, Cook, Taylor and Bush, P.A. is a progressive, full-service law firm. We continually seek to increase our knowledge, experience and resources to provide our clients with the services they desire and deserve. Evidence of CCT&B's commitment to quality and efficiency is the firm's new office building that includes advanced telecommunications, the latest in legal research technology and conference facilities. CCT&B attorneys offer legal services with emphasis on quality, professionalism, client service and efficiency.

Through its programs and activities, the Energy Division promotes the efficient and environmentally acceptable use of energy in all sectors of the State's economy. The Energy Division also encourages an environment that enhances the State's access to cost competitive, available energy resources, ultimately benefiting economic development in Mississippi.

The Strategic Biomass Initiative (SBI) at Mississippi Technology Alliance (MTA) is focused on commercializing biomass to energy and other renewable energy technologies. SBI personnel can take startup companies and entrepreneurs through its 18-step commercialization model and help them pitch their ideas to potential investors. SBI has also funded applied research and development and industrial project and is currently managing 14 projects valued at $3.5 million. SBI is designed to leverage other the services at MTA to serve the interests of investors, manufacturers, economic developers, technology providers, entrepreneurs, and communities. Whether it is finding the right technology or identifying funding sources, SBI can get you the right answers or put you in touch with the right people through its network of subject matter experts in the private and public sectors and academia. Mississippi Technology Alliance is an independent non-profit organization with the mission to drive innovation and technology-based economic development throughout the state of Mississippi.

USDA-Rural Development Rural Development is committed to helping improve the economy and quality of life in all of rural America. Through our programs, we touch rural America in many ways. Rural Development achieves its mission by helping rural individuals, communities and businesses obtain the financial and technical assistance needed to address their diverse and unique needs. Rural Development works to make sure that rural citizens can participate fully in the global economy.

The Mississippi Band of Choctaw Indians (MBCI) owns and operates a diversified portfolio of manufacturing, service, retail and tourism enterprises. The Tribe chose to develop for profit businesses to create jobs for its people, while also generating revenues to fund government services such as education, health care, police and fire protection among others. The success of those enterprises has allowed the Tribe to become more self-reliant while making significant economic contributions to the surrounding non-indian communities.

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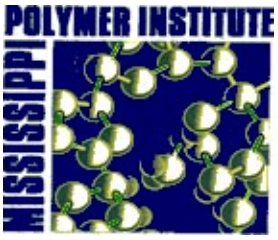

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WELCOME
Meeting Room 1-5

Mayor John Robert Smith, *Mayor of Meridian, Mississippi*

Biography:

Mayor of Meridian, MS, 1993-present; member of the Meridian City Council, 1989-1993, council president 1991-1992; former registered pharmacist; president and co-manager of Point Rexall Drug & Gifts, Inc., owner of Point Investments. Appointed by the President for a five-year term on the Amtrak Reform Board, 1998-2003; founder and co-chairman of the Crescent Corridor Coalition, composed of mayors on Amtrak's Crescent line, chairman of the National Forum on the Future of Passenger Rail; hosted the first of Amtrak's regional forums on the future of passenger rail in April, 1995. Has testified before Congress four times on the Amtrak issue; in January 1995 before the Senate Committee on Commerce, Science and Transportation, in February 1995 before the House Subcommittee on Railroads; on June 16, 1995 before the Senate Committee on Commerce, Service and Transportation; and on February 28, 1996 before the House Appropriations Subcommittee on Transportation. Serves as president of the board of directors of the Great American Station Foundation supported by Amtrak, serves on the Transportation and Communications Policy Committees of the U. S. Conference of Mayors. He has been a featured speaker at a variety of rail-related conferences including the National Corridors Initiative conference in 1996 and rapid rail conferences in Memphis in 1994 and New York in 1995.

OPENING KEYNOTE MESSAGE
Meeting Room 1-5

"BIOMASS ENERGY – MAKING IT WORK"
Mark Jenner, *Chief Analyst, Biomass Rules, Greenville, Illinois*

Abstract:

In 2005, crude oil broke the $60 per barrel price barrier. MTBE was replaced with ethanol as a fuel oxygenate, and the Biofuels Era was born. As 2007 came to a close ethanol and biodiesel plants were stopping construction and shutting down. The Biofuels Era appeared to be history.
Biofuels is much larger than ethanol and biodiesel. Those two products have launched the US biofuels industries, but they are just the beginning. The next-generation of fuels will come from new fiber crops, new oil crops, and new production from waste materials. Several cellulosic technology developers have announced a yield of 100 gallons/ton of carbon from solid waste. Also emerging are new dry-land oil crops and algae research and production that will provide bioenergy that has not appeared previously in other studies. Navigating the Biofuels Era will require lots of change: in feedstocks, in technical efficiency, environmental policy redirection and changes in economic infrastructure – all which will be outlined by Mark Jenner.

Biography:

Mark Jenner, PhD, is Chief Analyst at Biomass Rules, LLC. A biomass economist, Jenner's vision for bioenergy opportunities and challenges is unparalleled. His monthly newsletter, Burning Bio News, is a 'scorecard' for bioenergy adoption and can be found on his website along with links to breaking biomass news (www.biomassrules.com).

Biomass Rules, LLC is rooted in agriculture and environmental compliance. Current projects include biomass inventories, value-added feasibility studies, moving livestock producers from compliance to manure revenue, and developing a model regulatory index that credits the environmental benefits.

Jenner writes the Biomass Energy Outlook for BioCycle Magazine and wrote the 2006 BioTown, USA Sourcebook which is a biomass primer on locally available materials. He also developed the initial locally grown, biomass power plant concept for the Indiana Department of Agriculture's BioTown, USA project. Prior to forming Biomass Rules, LLC, he served nine years as manure visionary for the American Farm Bureau Federation.

POLICYMAKER FORUM
Meeting Room 1-5
Moderator: Brent Bailey, State Facilitator, 25x'25 Initiative

Cade Clurman, *Legislative Assistant, Agriculture and Energy, Office of Congressman Chip Pickering, Washington, D.C.*

Marie Thomas, *Policy Advisor, Office of Governor Haley Barbour, Jackson, Mississippi*

Biography:

Marie Thomas graduated summa cum laude from Mississippi State University in 2001 with a major in Marketing and a minor in Public Relations. In 2002, she traveled on a Rotary International Ambassadorial Scholarship to Brisbane, Australia, where she obtained her Masters in Business Administration from the University of Queensland.

Marie joined the staff of United States Senator Thad Cochran in 2003 in Washington, DC, where she served as a Legislative Assistant in the areas of banking, commerce, energy, insurance, housing, labor, small business, tax/finance, telecommunications, and trade. She also staffed Senate Appropriations Committee Chairman Thad Cochran on the following Appropriations Subcommittees: the Subcommittee on Energy and Water Appropriations, the Subcommittee on Labor, Health and Human Services and Related Agencies, the Subcommittee on Transportation, Housing and Urban Development and Related Agencies, and the Subcommittee on Commerce, Justice, Science and Related Agencies.

In January 2007, Marie began work for Governor Haley Barbour as a policy advisor handling the following issues: banking and insurance, energy, commerce and trade, economic development/community development, and labor/workforce, and taxes and bonds.

Jim Lipe, *Director of Environmental Affairs, Mississippi Department of Agriculture and Commerce, Jackson, Mississippi*

Biography:

Jim Lipe works for the Mississippi Department of Agriculture and Commerce. His primary duties include serving as agency's environmental policy advisor and liaison, working to assist in the development and promotion of alternative fuels and energy production in Mississippi and assisting farmers in developing and marketing natural resources as additional income sources. Jim holds a Bachelor's in Forest Resource Management and a Master's in Wildlife Ecology with areas of focus in Ecology, Forestry, Land Management and Chemistry.

Brandon Presley, *Commissioner, Public Service Commission-Northern District, Jackson, Mississippi*

Biography:

Commissioner Brandon Presley is currently serving as Northern District Public Service Commissioner. Commissioner Presley, 30, was born in Nettleton, Mississippi. He is a 1997 graduate of Nettleton High School, and attended Itawamba Community College and Mississippi State University. He is a graduate of the 2001 Charter Class of the Community Leadership Institute and the 2004 State Executive Development Institute.

In May of 2001, at the age of twenty-three, Brandon was elected Mayor of Nettleton; becoming one of the youngest mayors in Mississippi History, garnering seventy-eight percent of the vote. He was unopposed in his second term for Mayor, which began in July 2005.

Commissioner Presley currently serves as Chairman of the Board of Trustees at Itawamba Community College. He is a past Board Member of the Mississippi Municipal League (MML) and was MML's Legislative Chairman for 2006 and 2007. He is also a member of the Board of Directors of Gilmore Memorial Hospital. He is past-Chairman of the Lee County Council of Governments and also served as President of the North Mississippi Mayor's Association.

He is past-President and current member of the Nettleton Lions Club and a member of the Nettleton Civitan Club. He is a member of the Nettleton First Baptist Church.

Perry Lee, *Senator, Mississippi State Senate, Mendenhall, Mississippi*

Biography:

Senator Perry Lee is a native Mississippian and resides in Mendenhall, Mississippi. He is a graduate of Louisiana State University and holds a Master's degree from Mississippi State University. He retired from the Mississippi Cooperative Extension Service after a successful and distinguished career.

He was first elected to the Mississippi Senate in 2003 and was re-elected in 2007. He represents District 35 which includes parts of Copiah, Covington, Rankin, and Simpson Counties. He is currently serving as the Chairman of the Senate Forestry Committee and as Vice-Chair of the Senate Agriculture Committee and serves on numerous other Senate committees.

David Norquist, *Representative, Mississippi State House of Representatives, Cleveland, Mississippi*

Biography:

Representative David Norquist is a native of Greenville, Mississippi but now resides in Cleveland in Bolivar County. He represents Mississippi House District 28 which covers all or parts of Bolivar, Sunflower, and Washington Counties. In the Mississippi House of Representatives he serves as Vice-Chair of the House Ways and Means Committee and serves on many other committees including the Agriculture Committee.

Rep. Norquist is an attorney and graduate of Delta State University and the University of Mississippi School of Law. He is a member of the City of Cleveland Volunteer Fire Department, the Mississippi Defense Lawyers Association, the Defense Research Institute and the American Bar Association. He has represented District 28 since 2005.

LUNCHEON
Ballroom

Keynote Speech: Dr. Gale Buchanan
Under Secretary for Research, Education, and Economics
United States Department of Agriculture
1400 Jefferson Drive
Washington, DC 20250
Email: Eleanor.rollings@usda.gov

"Grand Challenges and Great Opportunities for the Agricultural and Life Sciences"

Abstract:

Agriculture is vital to a nation's economic being. It is the foundation industry of nations that under girds all other economic sectors. Continuous improvements in agriculture allow other economic sectors to grow and improve the quality of life for people.

Science plays a key role in improving agriculture thereby empowering both people and nations to rise above the poverty which is the source of so much misery and conflict in the world today.

Among many developed nations, agriculture is no longer recognized as central to human life and culture. However, societies with unhealthy agricultures fail; a nation that can not provide its people with food cannot prosper.

Public research systems have special responsibilities and challenges in addressing "public good" issues in agriculture. Developed nations also have a responsibility to share their knowledge with developing nations to help them join the greater international community and improve the quality of life of their people.

We as leaders in the agricultural research community also have an obligation to work together on behalf of all people to help solve some of the most difficult challenges mankind faces today: sustainable energy, adequate water, and global climate change.

We must use all the tools available to us, including biotechnology as well as traditional methods to improve agricultural production and efficiency and to develop sustainable biofuels and other biobased products to replace petroleum.

Additionally the challenges of water and climate change will also benefit from the new science and technologies available to the agricultural and life sciences.

Agricultural and life sciences are crucial to our success in overcoming the major challenges the world faces today. Leaders in agricultural research, education, extension need to work together and exert greater leadership within the scientific community and among policy makers to ensure the agricultural and life sciences are essential participants in finding sustainable solutions to these global challenges.

Biography:

Dr. Gale Buchanan received his B.S. and M.S. degrees in Agronomy from the University of Florida in 1959 and 1962, respectively, and the Ph.D. in Plant Physiology, with minors in Botany and Agronomy, from Iowa State University in 1965.

Dr. Buchanan spent the first 21 years of his professional career with Auburn University in the Department of Agronomy and Soils, with primary teaching and research responsibilities in weed science. He served as Dean and Director of the Alabama Agricultural Experiment Station from October 1, 1980 to September 30, 1985.

On April 14, 1986, he was appointed Associate Director of the Georgia Agricultural Experiment Stations and Resident Director of the Coastal Plain Experiment Station. He served as Interim Director of the Georgia Agricultural Experiment Stations from June, 1994 to February, 1995. He became Dean and Director of the College of Agricultural and Environmental Sciences March 1, 1995 up to 2006.

Currently, he serves as the USDA-Under Secretary for Research, Education, and Economics.

Introduction by Dr. Vance Watson

Biography:

Dr. Vance Watson serves as Interim President, Mississippi State University/Vice President, Division of Agriculture, Forestry and Veterinary Medicine/ Dean, College of Agriculture and Life Sciences/Director, Mississippi Agricultural and Forestry Experiment Station/Executive Director, Mississippi State University Extension and Outreach/Professor of Agronomy, Mississippi State University. Dr. Watson's duties include the following: provide leadership to the Division of Agriculture, Forestry and Veterinary Medicine and serve as Dean of the College of Agriculture and Life Sciences, Director of the Mississippi Agricultural and Forestry Experiment Station, and as Executive Director of the Mississippi State University Extension and Outreach. The Division consists of six major units. They are the Mississippi Agricultural and Forestry Experiment Station (MAFES), Mississippi State University Extension Service (MSU-ES), Forest and Wildlife Research Center (FWRC), College of Veterinary Medicine (CVM), College of Forest Resources (CFR) and the College of Agriculture and Life Sciences (CALS). Units making up the Division have approximately 1800 employees, over 2100 students and a budget of approximately $171 million. During the last seven years, the Division has had a capital improvements program approaching $75 million in new construction and renovations. Programs of the Division are delivered through campus departments, four research and extension centers, 14 branch stations and offices in each of 82 counties. The Division is ranked 8^{t} nationally by the National Science Foundation in agriculture research investment. Specific duties as vice president, dean, and director include identifying a vision and setting strategic directions for agricultural and forestry teaching, research and outreach, establishing policy, helping to secure financial resources, managing budgets, and regular interaction with stakeholders and policy makers at local, state, and national levels.

Biomass Feedstock Forum
Meeting Room 1-5
Moderator: Dr. Liam Leightley, Interim Associate Research Director, Forest and Wildlife Research Center- Mississippi State University

WOOD: FUELING OUR PAST AND OUR FUTURE????

Wayne Tucker, *Manager, Forest Management Division, Mississippi Institute of Forestry Inventory, Starkville, Mississippi*

Abstract:

The title of the presentation is "Wood: Fueling our past and our future????" The presentation includes an over view of the forest products industry in the state, its economic impact and emerging markets for Mississippi wood. Also, an over view of what is needed to recruit new businesses and expand existing businesses in Mississippi. Why the forest resources inventory of the state is critical to new industry, the Mississippi Institute for Forest Inventory.

Biography:

Wayne Tucker was raised in Wewoka, Oklahoma, the capital of the Creek Indian Nation. He graduated from Oklahoma State University in 1973 following a tour a duty in the U. S. Navy from1966 -1969, mostly in the rivers of Vietnam. In 1973, Tucker began his forestry career with Georgia-Pacific Corporation in Arkansas. After moving to Mississippi in 1976, he lived and worked near the G-P facility at Taylorsville, MS. While with G-P, Tucker held various management positions, including Sr. Area Forest Manager and Regional Acquisition and Sales Manager. After 28 years with G-P, Tucker formed his own consulting firm, Professional Forestry, LLC. In 2000, Tucker accepted the position of Regional Manager with Forest Resources Association, a forest industry trade association, and represented the timber industry in the South Central region of the United States. In December of 2003, Tucker became the Executive Director of the newly created state agency, the Mississippi Institute for Forest Inventory. MIFI is responsible for developing and implementing a continuous statewide inventory of Mississippi's forest resources. In July of 2007, MIFI was made a part of the Mississippi Forestry Commission where Tucker also serves as the Manager, Forest Management Division.

SWITCHGRASS AS A DEDICATED BIOENERGY CROP

Joe Bouton, *Senior Vice-President & Director, The Samuel Roberts Noble Foundation, Admore, Oklahoma*

Abstract:

Switchgrass (*Panicum virgatum* L.) is widely adapted, perennial, C4 grass native to the prairies of North America. Switchgrass was identified by the United States Department of Energy (DOE) as a the main herbaceous, dedicated energy crop because of its potential for high fuel yields, drought tolerance, and ability to grows well on marginal cropland without heavy fertilizing or intensive management. There are two predominate ecotype or cytotype groups of switchgrass: lowlands (tetraploids, coarse, high yielding, less winter hardy) and uplands (tetraploids or octoploids, fine textured, lower yielding, winter hardy). Methods for establishing and managing the crop are well known and no more difficult than other perennial warm season grasses. Switchgrass is grown currently for hay, pasture, and conservation uses, but for biofuel, it will be used mainly as a feedstock for ethanol production. Although named cultivars are available, when compared to other high value forages, the species is barely removed from the wild from a crop improvement standpoint. Therefore, potential exists to improve the grass as a biofuel feedstock through breeding, biotechnology, and management research. Switchgrass is a highly self-incompatible, out-

crossing species, therefore, conventional breeding methodologies currently include population improvement with the eventual development of synthetic cultivars, and the possible production of F1 hybrid cultivars. The main traits of interest for switchgrass improvement are yield, improved seedling establishment, and increased feedstock quality (higher digestibility and lower lignin). The use of genomic and transgenic technologies is new, and still in the initial stages for the grass. Microsatellite markers are being developed, and an initial framework map and mapping population are publicly available. Effective modes of tissue culture regeneration are documented, and transformation was successfully achieved using both microprojectile bombardment and *Agrobacterium* protocols.

Biography:

Dr. Joe Bouton is Senior Vice President and Director of the Samuel Roberts Noble Foundation's Forage Improvement Division, and Professor Emeritus, University of Georgia. Dr. Bouton develops forage and bioenergy cultivars for Southern USA. He is best known for the release and commercialization of 'Alfagraze' alfalfa, "MaxQ" tall fescue, and 'Durana' and 'Patriot' white clovers. His switchgrass cultivar, "NF/GA 993", is currently under seed production for future release as a biofuels crop for the southern region. For his achievements, he was presented the Carl Sprengel Research Award by the American Society of Agronomy, named Man of the Year in Service to Southeastern Agriculture by Progressive Farmer Magazine, and awarded the Richard R. Hill Achievement Award by the North American Alfalfa Improvement Conference and a Creative Research Medal by the University of Georgia.

SUSTAINABLE ENERGY RESEARCH CENTER (SERC)

Eugene Columbus, *Senior Research Associate in the Department of Agricultural and Biological Engineering, Mississippi State University, Starkville, Mississippi*

Abstract:

The goal of the Sustainable Energy Research Center (SERC) at Mississippi State University (MSU) is to develop new engineering and scientific knowledge and serve as a catalyst to create sustainable energy industries in the southeastern US. The SERC provides a foundation for uniting a multi-disciplinary team of MSU experts, highly experienced with energy resource development and utilization, to provide the framework for a new paradigm of energy research and development in which both technology development and commercialization issues are concurrently addressed. Energy platforms to be developed include bio-oil, biocrude and synthesis gas derived transportation fuels, and cellulosic ethanol. Resource utilization efforts include feedstock development and engineering, product distribution, assessing environmental impacts, energy conservation, compatibility of fuels, commercialization of developed processes, and economics and energy policy development.

Biography:

Eugene P. Columbus is a senior Research Associate in the Department of Agricultural and Biological Engineering, Mississippi State University and is Research Coordinator for Biomass and Alternative Crops Programs in the Mississippi Agricultural and Forestry Experiment Station. Currently he coordinates the use of over $1,000,000 in research funds on a yearly basis as well as performing research in the area of biomass feedstock engineering. He received his B.S. and M.S. in Agricultural Engineering from Mississippi State University. Mr. Columbus has had a very distinguished career that spans over 40 years as a USDA research agricultural engineer, civil engineer with the Corps of Engineers, and as an agricultural engineer with Mississippi State University. His career in the cotton ginning, crops processing, and biomass production areas has resulted over 140 publications, three patents, and over 300 presentations.

Biomass Harvest and Collection Forum
Meeting Room 1-5
Moderator: Sumesh Arora, Director, Strategic Biomass Initiative, Mississippi Technology Alliance, Ridgeland, Mississippi

LOOKING AHEAD AT FEEDSTOCK SUPPLY SYSTEM DESIGNS FOR LIGNO-CELLULOSIC BIOMASS

Christopher T. Wright, *Lead Research Engineer,* Biofuels and Renewable Energy Technologies, *Idaho National Laboratory, Idaho Falls, Idaho*

Abstract:

On December 19, 2007, the President signed the Energy Independence and Security Act of 2007 (EISA) into law. The Department of Energy (DOE) is committed to meeting the increased Renewable Fuel Standard (RFS) stated in this law. As such, The Idaho National Laboratory, lead feedstock supply system design and logistics laboratory for DOE's Office of the Biomass Program (OBP), has performed R&D focused on overcoming feedstock barriers described in the "Roadmap for Agriculture Biomass Feedstock Supply in the United States" (2003). Three feedstock supply system designs have emerged from the R&D that support current pilot and demonstration-scale cellulosic biorefineries and set the targets for an advanced feedstock supply system that is needed to meet the 2022 RFS and 2030 petroleum displacement goals. This presentation will describe the basis of the supply system designs and provide the vision for the Advanced Feedstock Supply System Design for lingo-cellulosic material.

Biography:

Dr. Christopher T. Wright (Ph.D., Utah State University) is a Lead Research Engineer in the Idaho National Laboratory's Biofuels and Renewable Energy Technologies Department. He has over 10 years of experimental and numerical research experience in applied solid mechanics and fluid dynamics. His work includes investigating the biomechanical properties of agricultural residues and analyzing flow separation processes in agricultural machinery. His work specifically supports the Department of Energy's Office of the Biomass Program (OBP) where he serves as the Preprocessing Task Lead within the Feedstock Platform. In this capacity, Dr. Wright manages and performs research on full-scale size reduction, fundamental deconstruction and characterization, and advanced densification techniques of lingo-cellulosic feedstocks.

Dr. Wright also works within OBP's analysis group providing state-of-technology assessments of the feedstock assembly system. This work has lead to the joint development of feedstock techno-economic models, with Oakridge National Laboratory. These models provide a framework to develop advanced feedstock assembly system designs that identify technology barriers and guide R&D. In addition, Dr. Wright is part of a team of numerical analysts developing "Virtual Engineering" tools that will integrate various sustainability, production, and conversion models with the feedstock assembly system models. This effort will help in optimizing the design of a lingo-cellulosic biofuels industry constrained by feedstock sustainability, feedstock logistic costs, and feedstock conversion efficiencies.

CHIPPING BIOMASS FOR CO-MILLING WITH COAL

Dana Mitchell, *Research Engineer, United States Department of Agriculture Forest Service*
USDA Forest Service, Southern Research Station, Auburn, Alabama

Abstract:

The USDA Forest Service, Forest Products Lab funds several grants each year for the purpose of studying woody biomass utilization. One project selected during 2006 involves removing small diameter stems and unmerchantable woody material from National Forest lands and delivering it to a pulverized coal-fired power plant in Alabama. The Shoal Creek Ranger District of the Talladega National Forest and the Gadsden Steam Plant are serving as two of the demonstration areas for the project.

One outcome of the project was to investigate the viable harvesting techniques and processing required to meet a 0.635 cm chip-sized product for use in the power plant trial. The material for this study needed to be much smaller in size than for traditional hog fuel. Precision-Husky Corporation of Leeds, AL was a partner in the project and manufactured a machine that could meet the chip size requirements of the power plant with one-pass processing of whole trees. The Precision Husky ProGrind H-3045 prototype horizontal drum grinder was fitted with knives in place of grinder teeth and the machine rolled off of the manufacturing line in August, 2007. The H-3045 was delivered to the study site on the Talladega National Forest near Heflin, Alabama a few days later. The machine was used to comminute whole trees into a variety of chip sizes for testing at the Gadsden power plant. The production and cost data are presented.

Biography:

Dana Mitchell is a Research Engineer for the Southern Research Station – a branch of the US Forest Service. She has degrees from Washington State University, Oregon State University, and will soon complete her PhD at Auburn University. Her engineering research unit is located in Auburn, AL. Their research extends across state boundaries and also includes international exchanges. Dana's research topics include studies of the costs and production rates of harvesting systems, including biomass harvesting and multi-shift logging.

A BIOBASED AND PETROBASED REFINERY PROCESS: A TIMELINE COMPARISON AND THE VALUE PROPOSITION FOR SOCIETY

Dr. James Rawlins*, University of Southern Mississippi, Polymer Science, Hattiesburg, Mississippi*

Biography:

Dr. James Rawlins received a B.S. in Polymer Science in 1993 and a Ph.D. in Polymer Science and Engineering in 1999, both from the University of Southern Mississippi. His undergraduate research involved a mechanistic study of the "drying" process of vegetable oils and his doctoral research investigated ultraviolet curable polymers for powder coatings. After one year with Highland International, Inc., a coatings manufacturer in Boone NC., Dr. Rawlins joined Bayer Corporation in 2000, two years in Pittsburgh, PA., as a Senior Research Chemist and two years in Leverkusen, Germany as the Technical Marketing Manager of Powder Coating Raw Materials for Europe. James then joined Southern Miss as an Assistant Professor of Polymer Science and Engineering in 2004. His research interests are in functional polymeric materials. Specific interests are in the synthesis, characterization, and function for polymer networks, self-healing, self-synthesis, embedded raw material delivery, and thin film electronic applications of polymers. He directs a 20 plus member research team and is the advisor of 4 graduate students.

FROM CONCEPTION TO CONSTRUCTION: ASSESSING BIO-BASED OPPORTUNITIES
Meeting Room 1-5
Moderator: Dr. Les Goff, President, Noetic Technologies, Hattiesburg, Mississippi

ALTERNATIVE ENERGY OPPORTUNITIES FOR THE STATE OF MISSISSIPPI

***Sam Shepard**, Director of Technology, Missing Link Technologies, LLC, Cypress, Texas*

Abstract:

The State of Mississippi is uniquely poised to play a strategic role in the Alternative Energy commercialization both domestically and internationally. "Green" technologies, such as waste to energy, algae to oil, wind, solar, biogas and biomass technologies, will be playing a crucial role in America's energy independence. Mississippi produces a small amount of oil and gas, but not enough to meet the in-State requirement; Mississippi purchases more than one-half of its natural gas from neighboring States; and Mississippi imports electricity from neighboring States in order to satisfy consumer demand. There are many reasons for this, both political and commercial. The current administration is moving in a very positive direction in creating favorable business conditions that will result in industry coming to the State that will not only assist the Mississippi consumers, but could result in Mississippi being a crucial contributor to America's Energy Independence.

As a result, Global Green Resources, L.L.C. has reviewed several sites throughout the US and has decided to develop a Strategic Alternative Energy Center in Mississippi. This Center will incorporate a diverse portfolio of Alternative Energy Technologies owned or provided by GGR including;

1. Algae to Oil
2. Biomass to electricity
3. Wind
4. Solar
5. Biodiesel
6. Biogas

It is the desire of Global Green Resources, with the State of Mississippi, to create Strategic Global Alternative Energy Facilities throughout Mississippi, that not only benefit Mississippi, but will pave the path toward National Energy Independence.

Biography:

Sam Shepard serves as Director of Technology for EcoSolids International, Ltd, headquartered in the UK and is the Technology Consultant for Missing Link Technology, L.L.C., a company specializing in development and commercialization of leading edge technologies. He holds Lifetime Fellow Status at the American College of Forensic Examiners, with a Class III Certification in Homeland Security, with specialties in WMD and COBRA (Chemical Ordinance, Biological and Radiologic Armaments). He was the founder and CEO of Bioset, Inc. from 1995 until he left the company in 2003 and was the founder and CEO of American Environmental Forensics. He is currently working as a consultant to (5) Department of Defense DARPA teams for the development and commercialization of Biofuels and Alternative Energy Systems for the military and civilian application in the "algae to oil" DARPA program.

Sam has authored 8 US patents, 4 International patents and currently involved in the development of 4 patents pending. He has developed microalgae technology and the oil extraction technology

that is currently being employed globally and is actively involved in the commercialization of the "algae to oil" projects for several Domestic and International companies.

Sam has over 33 years experience in the Petro Chemical, Energy and wastewater industries. He holds undergraduate degrees, majoring in Chemistry, B.S in Chemical Engineering and M.S. in Engineering Technology, majoring in Environmental Engineering. He assisted in the development of technology for the Lunar Outpost Commission for the Moon/Mars Mission in 1990, he is a private pilot with over 1100 hours of flight time, developed ballistic absorbing media for military purposes and has extensive training in engineering, chemistry, mathematics, statistics, risk assessment, forensic engineering and holds 2 certifications in FEMA risk management.

HOW INDUSTRY AND FINANCIAL INSTITUTIONS ANALYZES BIOMASS RESOURCE COST AND AVAILABILITY

***Stan Parton**, President, The Parton Group, Lilburn, Georgia*

Abstract:

Biomass feedstock represents the greatest component of the Variable Operating Cost for a facility. The financial success and securing of the lowest cost financing for projects is tied to properly understanding the current and projected availability and cost of suitable feedstock materials. Comprehensive biomass availability and cost studies are therefore a requirement both for developers and financers of projects.

Biography:

Stan Parton is President of The Parton Group, Inc. a global strategic service provided for the Forest Products sector. From a family of foresters and sawmillers Stan has spent his life in forest products. He received a BS in Pulp and Paper Science and Technology (a specialized Chemical Engineering program for the pulp and paper industry) from North Carolina State University in Raleigh, NC in 1971.

His career in the industry has included 5 years in consulting engineering designing pulp and paper facilities, 23 years in advanced technology supply to the industry and eight years in strategic services

He has traveled extensively in the industry having personally visited many of the pulp and paper operations in North America and Scandinavia.

The Parton Group has forest products associates each with over 30 years of broad experience in the sector. Associates are located in the US, Canada and Sweden. The company provides informed opinions about forest product matters to financial institutions, pulp and paper companies and energy companies. Financial institutions in New York, Chicago, Boston, San Francisco and London constitute over 70% of the company's business with pulp and paper and energy companies equally dividing the balance.

BIOENERGY DEVELOPMENT, CHALLENGES AND OPPORTUNITIES

***Kenneth "Pete" Moss,** President, Frazier, Barnes & Associates, LLC, Memphis, Tennessee*

Abstract:

Energy costs are skyrocketing, threatening our national security, economic stability and ability to compete in the world marketplace. Crude petroleum oil has surpassed $110 per barrel and the

chances for higher prices continues to grow. Recent statements by the OPEC secretary general, Abdullah al-Badrithe, indicate that relief is not imminent. "At the moment there is enough oil in the market and no need to change OPEC's output." While discouraging to most Americans, it is increasingly clear that the viability of the bioenergy industry will continue to grow.

However, the bioenergy industry is not immune to its own set of challenges. Each bioenergy project shares common characteristics and requirements that must be met. Sources of feedstock are at the top of the list along with selecting the appropriate technology, capital acquisition and transportation optimization among others. Frazier, Barnes, & Associates will cover the development of bioenergy projects and discuss challenges and opportunities that project developers may face.

Biography:

Kenneth "Pete" Moss is the President and owner of Frazier, Barnes & Associates in Memphis, Tennessee. Pete has 19 years of experience in the Agricultural Industry, the last twelve as a consultant with Frazier, Barnes. He has conducted over 100 biodiesel and ethanol feasibility studies ranging from site specific to regional and statewide analyses. FBA also provides business plans, project development services and technical due diligence to the biofuels industry. Mr. Moss regularly speaks at biofuel investment summits around the country regarding the optimal methods to develop projects.

Prior to joining FBA, Pete was the Marketing Director for an oilseed processing firm in Arkansas and served as Vice President for First National Bank in Arkansas. He holds a Bachelor of Science degree in Management and a Master's in Business Administration from the University of Memphis. Pete has been instrumental in the development of several large scale biodiesel plants in the U.S. and FBA provides a wide range of development services to the biodiesel industry.

OPPORTUNITIES FOR A BIO-BASED ECONOMY: WHERE DO WE GO NOW?
Meeting Room 1-5

"THE ENERGY BUSINESS IS GOOD BUSINESS IN THE SOUTHEAST; EVEN IF IT IS RENEWABLE!"

Marvin Burchfield, *Vice President, Decker Energy International, Winter Park, Florida*

Abstract:

The essentials for energy platforms in the southeast based on biomass will be discussed. Foundational subjects include Energy Consumption, the Dynamic and Volatile Energy Complex, Renewable Energy Momentum, Resource Supply and Matching Technologies, Environmental Impacts as well as Commercial versus Developing Technologies. Several cases will be presented to demonstrate that success in the renewable energy space requires an understanding and an ability to execute in the existing underlying commodity energy markets.

Biography:

Marvin Burchfield calls the foothills of the Blue Ridge Mountains home. He received a Bachelor of Science degree in Agricultural Engineering from Clemson University in 1987. His expertise and ability has energized a professional career encompassing roles in construction, sales, engineering, research, operations, development, acquisitions and executive management with both small and large organizations such as Ralston Purina, the South Carolina Agricultural Experiment Station, Carrier Corporation and Duke Energy. He currently serves as a vice president of Decker Energy International, Inc. (DEI).

DEI develops, acquires, and owns energy generating facilities that meet the energy needs of utility and industrial customers by providing reliable, low-cost energy with a keen sensitivity to the environment. Since 1982, DEI has developed or acquired fourteen diverse energy projects totaling nearly 1,000 megawatts of generating capacity and $700 million in total investment, including six renewable energy biomass fueled facilities. With a current total installed wood fired capacity of 88 MW, prior involvement with other biomass projects in excess of 200 MW more, and a current late stage development of a 40 MW facility in Connecticut, DEI is one of the most experienced independent developer / owner of wood residue fueled electric generation in North America.

MORNING KEYNOTE MESSAGE

Meeting Room 1-5
Moderator: Andy Whittington, Environmental Programs Coordinator, Mississippi Farm Bureau Federation, Jackson, Mississippi

WORKFORCE DEVELOPMENT FOR EMERGING TECHNOLOGIES
Dr. Eric Clark, *Executive Director, Mississippi State Board of Community and Junior Colleges, Jackson, Mississippi*

Biography:

Eric Clark began serving as Executive Director of the Mississippi State Board for Community and Junior Colleges in January 2008. He previously served for twelve years as Mississippi Secretary of State and sixteen years as a member of the Mississippi Legislature.

Eric Clark was valedictorian of his class at Taylorsville High School. He received a bachelor's degree from Millsaps College, a master's degree from the University of Mississippi, and a doctorate in history from Mississippi State University. Clark taught history and government at Magee High School, Jones County Junior College, and Mississippi College. He also manages his family's tree farm in Smith County.

Eric Clark is a member of the Mississippi Economic Council, Mississippi Farm Bureau, Mississippi Forestry Association, and Mississippi Historical Society. He was recognized with the American Family Association's "God and Country" Award for authoring the law that outlawed possession of child pornography in Mississippi, and the Mississippi Wildlife Federation's Conservation Legislator of the year for his efforts to preserve natural lands on the Gulf Coast. He was twice awarded the Mississippi Nature Conservancy's Public Service Award. He is also a Certified Public Manager.

WOODY BIOMASS UTILIZATION IN MISSISSIPPI: OPPORTUNITIES FOR BIOENERGY AND BIO-BASED PRODUCTS

Meeting Room 1-5

Moderator: Dr. Glen Hughes, Extension Professor, Mississippi State University Extension Service, Starkville, Mississippi

CURRENT STATUS OF WOODY BIOMASS FEEDSTOCK AVAILABILITY IN MISSISSIPPI

Dr. Donald Grebner, *Associate Professor, Mississippi State University Department of Forestry, Starkville, Mississippi*

Abstract:

This research evaluated woody biomass from logging residues, small-diameter trees, mill residues, and urban waste as a feedstock for bioenergy conversion in Mississippi. Supplies and production cost of woody biomass were derived from Forest Inventory Analysis (FIA) database, a recent forest inventory conducted by the Mississippi Institute for Forest Inventory, and other sources of local information. Given the variability of cost information, Monte Carlo simulations were performed to estimate the marginal costs of each woody biomass type. According to our analysis, about 4.0 million dry tons of woody biomass is available for production of up to 318 million gallons of ethanol each year in Mississippi. The feedstock consists of 69% logging residues, 21% small-diameter trees, 7% urban waste, and 3% mill residues. Logging residues can be produced and delivered for $40 per dry ton; small-diameter trees for $49 per dry ton; mill residues for $31 per dry ton; and urban waste for $36 per dry ton. Sensitivity analysis indicates that current technological efficiency, stumpage price, and procurement distances are factors with the largest impacts on biofuel costs. The results provide a valuable decision support tool for resource managers and industries interested in the development of bioenergy in Mississippi.

Biography:

Dr. Donald L. Grebner is an associate professor in the Department of Forestry, Mississippi State University. He joined the MSU forestry faculty in 1999 and teaches undergraduate and graduate courses in forest resource management and international forest resources and trade. His area of specialization is forest economics and management. Recent research includes: (1) assessing the potential of existing woody biomass supply in Mississippi to support bio-fuel generation; (2) evaluating the status and challenges of governmental policies affecting woody biomass utilization for bio-energy production in the United States; (3) examining the potential for carbon storage and technology transfer in the Southeastern United States; (4) developing a practical framework for evaluating wood hauling costs; (5) evaluating afforestation of flooded farmland and policy implications for the Mississippi Delta; (6) measuring the spread of invasive species (i.e., cogon grass and kudzu) and evaluating financial impacts of alternative forest protection measures to promote afforestation; (7) identifying the opportunity costs of managing for wildlife habitat in the North Central Hills region of Mississippi; and (8) evaluating the impacts of inaccurate area estimation on harvest scheduling using different image resolutions. He earned a B.S. in Forest Management from the University of Maine, an M.F. from Yale University, an M.A. in Economics and a Ph.D. in Forest Economics and Management from Virginia Tech.

HARVESTING OF FOREST RESIDUES USING SLASH BUNDLING EQUIPMENT

Dr. Philip H. Steele, *Professor, Mississippi State University Department of Forest Products, Starkville, Mississippi*

Abstract:

Post-harvest residues for southern pine species have not previously been quantified to compare volumes produced from both thinnings and clearcut volumes. A John Deere 1490 Slash Bundler bundled post-harvest residues following a 1st thinning of a 14-year-old stand; a 2nd thinning of a 25-year-old stand and a clearcut of a naturally regenerated mature stand of 54 years of age. Regardless of stand type, nearly one-fifth of merchantable volume harvested was collected as post-harvest residue. Initial bundle moisture contents were 127.3, 81.1 and 49.4% dry basis (db) for the 1st and 2nd thinning and mature stands, respectively. Percentage of bundle needle contents was found to significantly influence the relative moisture contents of the bundles by stand type due to the high moisture content of needles compared to other bundle components. Bundles were stored outside, and exposed to very hot and dry conditions, dried very rapidly to lowest moisture contents of 22.8, 14.5 and 13.5% (db) for 1st and 2nd thinning and mature stands, respectively. Response to moderating temperatures and higher precipitation resulted in rapid moisture content increase to 69.9, 46.2 and 38.1% (db) for the 1st and 2nd thinning, and mature stand bundles by the end of the study. Temperature and precipitation and bundle percentage needles content all significantly influenced the rapid moisture content variations observed over the study periods.

Biography:

Dr. Philip Steele has been a Professor in the Dept. of Forest Products, College of Forest Resources, Mississippi State University (MSU) for 20 years with both research and teaching duties. Dr. Steele is the Thrust Leader of the MSU Sustainable Energy Research Center Bio-Oil Research Group and manager of the Bio-Oil Laboratory at MSU. The MSU Bio-Oil Research Group is comprised of 10 on-campus faculty in the Departments of Agricultural and Biological Engineering, Chemistry, Chemical Engineering, Forest Products and Mechanical Engineering who are developing technology for the production of fuels from bio-oils made from various types of wood and agricultural feed stocks.

Dr. Steele has won several research awards including the College of Forest Resources Outstanding Research Award and awards for exceptional research papers from both the Hardwood Research Council and the Forest Products Society. He has published widely and is the author or co-author of over 100 research papers.

WOODY BIOMASS TRAINING RESOURCES

Dr. Randy Rousseau, *Associate Extension/Research Professor, Mississippi State University Department of Forest Products, Starkville, Mississippi*

Abstract:

The development of a biomass training program for Mississippi will focus on a three stage educational approach. The first stage of training will target those individuals that will bring this information directly to public, as in the case of Mississippi the County Extension Personnel and Extension Specialists of the four Mississippi Extension Districts. The second stage of training will focus on a general awareness program, where the target audiences will be the Mississippi County Forestry Associations, Forest Managers, Forest Consultants, the Mississippi Rural Economic Council and the Mississippi Forestry Association. These sessions might include seminars and field days. The final stage will be the development of a Biomass/Bioenergy Short Course. This short

course will be has the possibility of being offered not only as a local course but as a distant learning course, on DVD, on-line, or through interactive video. This system will ensure that this course will be easily accessed by anyone interested in forest biomass and bioenergy. It is our hope that this short course can be used as cornerstone to an evolving biomass/bioenergy short course over the next few years.

Biography:

Dr. Randall Rousseau is a native of Baton Rouge, LA. He has a BS and a MS in Forestry from Louisiana State University in 1974 and 1976, respectively and a PhD in genetics from Mississippi State University in 1980.

Following graduation from Mississippi State University Randall took a job with Westvaco as a research scientist in charge of hardwood tree improvement and Improvement of Non-Native Tree Species. In 1989, Randall was assigned Mission Leader of the Interior Loblolly Pine Program, which included lands in Kentucky, Tennessee, Missouri, Illinois, Ohio, Virginia and West Virginia. In 1999, he became Research Center Leader for the Central Forest Research Center where he directed research in pine and hardwoods.

Following the merger of Mead and Westvaco in 2003, Randall was named Project/Center Leader for MeadWestvaco. He remained in that position until July 2005 when the Fine Papers Division of MeadWestvaco was sold to Cerberus Capital Management. From July 2005 to September 2006 Randall worked as a consultant for SmartWood, Bayer Chemicals, GreenWood Resources, ArborGen and MeadWestvaco. This work included the areas of tree improvement, certification, biotechnology, silviculture, economics and pesticides.

In September 2006 Randall took a Research/Extension position within the College of Forest Resources as Associate Professor specializing in hardwood management. His primary emphasis will be in continued development of hardwood programs, initiated by Dr. John Hodges. His areas of research will concentrate on bio-energy using hardwood plantations and cloning aspects of bottomland oak species.

MISSIPPI BIOMASS COUNCIL ANNUAL MEETING
Ballroom
Guest Speaker: Dr. Motice Bruce, Executive Director
Mississippi Development Authority-Energy Division
Jackson, Mississippi

Dr. Motice Bruce became the Director of the Mississippi Development Authority- Energy Division in February 2008. She has prior experience in the Energy Division as a Bureau Manager and Interim Director. Motice has also served the agency, then known as the Governor's Office of Federal, State and Local Programs, as a Research Analyst; and was employed as a Grants Manager when the agency was known as the Mississippi Department of Economic and Community Development.

Motice has extensive public and private sector experience in administration, business and finance. She holds a Bachelor's Degree in Political Science from Tougaloo College and a Master's Degree in Public Policy and Administration from Jackson State University. She has postgraduate studies in finance and business administration. Motice also has a Doctorate of Education in Organizational Leadership from NOVA Southeastern University.

Her current primary responsibility is over-site of the technical and financial assistance programs for energy eefficiency and renewable energy. She champions the energy team in training schools, hospitals, homeowners, school students and business officials how use simple measures to manage energy usage and utilize new technology to reduce energy consumption.

Dr. Bruce is a member of the Mississippi Economic Development Council; Industrial Energy Technology Advisory Board; and Designated Representative for MDA on the Mississippi Department of Environmental Quality Title V Advisory Council. She also serves on a number of civic, private and charitable organization boards.

STUDENT RESEARCH POSTER COMPETITION
Ballroom

Posters are listed *in no particular order*, and will be judged by the number of votes received from conference attendees when participating in the poster competition session at 5:30 p.m. on Monday, April 14. Winners will be announced in a session beginning at 9:30 a.m. Tuesday morning.

DEGRADATION OF LIGNOCELLULOSE IN SOUTHERN PINE SAWDUST BY THE FUNGUS THRICHODERMA REESEI
Rose Kishinhi, Jackson State University

SUGAR PRODUCTION FROM THE DECOMPOITION OF LIGNOCELLULOSIC MATERIALS BY TRICHODERMA REESEI UNDER AEROBIC CONDITION
Miriam Ighoavodha, Jackson State University

UPGRADING OF BIO-OILS SULFATE-PROMOTED IRON OXIDE
Qi Li, Mississippi State University

CREATING NEW UTILIZATION OPPORTUNITIES FOR CRUDE GLYCERIN
Rex Livingston, Mississippi State University

A NOVEL METHOD FOR DETERMINATION OF SURFACE AREA OF BIOMASS PARTICLES
Lin Wei and ***C. Igathinathane,*** Mississippi State University

MACHINE VISION METHODS OF DETERMINING SIZE DISTRIBUTION OF BIOMASS & AGRICULTURAL MATERIALS
Cannayen Igathinathane, Mississippi State University

CONVERTING SPENT WOMBAT FLUID TO FERTILIZERS
Laura Beth Moore, University of Southern Mississippi

STABILITY OF CATFISH BIODIESEL UNDER NORMAL VERSUS ACCELERATED STORAGE CONDITIONS
Saowalee Jongrattananon, Mississippi State University

STABILITY OF CATFISH ANTOXIDANT CONTAINING BIODIESEL UNDER ACCELERATED STORAGE CONDITIONS
Saowalee Jongrattananon, Mississippi State University

UPGRADING PYROLYSIS DERIVED WOOD-BASED BIO-OILS ON DIFFERENT COMMERCIAL HYDRO TREATING CATALYSTS
Sanjeev Kumar Gajjela, Mississippi State University

STUDY OF IMMOBILIZING ENZYMES ON NANOPARTICLES AND CONVERSION OF LIGNOCELLULOSIC BIOMASS BY USING CELLUBIASE
Sean Cook, Jackson State University

UTILIZATION OF WASTE PLASTIC TO UPGRADE WOOD-DERIVED BIO-OIL PRODUCTS
Priyanka Bhattacharya, Mississippi State University

A BIO-ENERGY MILL LOCATION AND DECISION SUPPORT SYSTEM BASED ON A COUNTY-LEVEL FOREST INVENTORY & GEO-SPATIAL INFORMATION
Thomas L. Jones, Mississippi State University

2008 Mississippi Biomass Council
Scholarship for Undergraduate Biomass Studies

Sponsored by the Mississippi Technology Alliance - Strategic Biomass Initiative

$1,000
Emily Dickens
Polymer Science
University of Southern Mississippi

$500
Darrell Rex Livingston
Agricultural and Biological Engineering
Mississippi State University

Student Research Poster Competition Winners

Sponsored by the Mississippi Biomass Council

FIRST PLACE PRIZE: $350

SECOND PLACE PRIZE: $200

THIRD PLACE PRIZE: $100

Essay by Emily Dickens

$1,000 Scholarship Recipient

Mississippi Biomass Council Scholarship Recipient Platform

Research of new applications for biomass is important in the development of renewable and environmentally friendly products. Questions about the sustainability of petroleum reserves and the effects of petrochemical-based products on the environment have prompted the move towards exploring avenues of enhancing the use of natural products in our daily lives. These efforts have resulted in the development and commercial use of natural derivatives such as biodiesel, bioethanol, plastics derived from crops, vegetable oil derivative-based coatings and plastics, and soybean protein-based composites that offer environmentally-responsible alternatives to petrochemical derivatives and environmental threats of pollution and limited landfill space.

I am currently a junior in the Polymer Science program in the University of Southern Mississippi (Southern Miss). I also work part-time in the Thames-Rawlins Research Group (TRRG) at Southern Miss where I am involved in the development of formaldehyde-free particleboards. Commercial particleboards employ urea-formaldehyde resin as the adhesive and emit formaldehyde over their service lives. Formaldehyde causes adverse reactions in humans even at low concentrations, and the International Agency for Research on Cancer has classified formaldehyde as a human carcinogen. The TRRG has developed particleboards that employ a soybean protein-based adhesive as the sole binder and the resulting boards are totally free of synthetic formaldehyde precursors. My research experience has motivated me to pursue a career in biomass technology and develop affordable biomass material options for the consumer.

I am a single mother of two young children and am committed to ensuring a proper education for myself and my family. My financial resources are limited to governmental assistance (food stamps and child care assistance) and the income from working part-time at Southern Miss. Needless to say, I am constantly trying to make ends meet and any financial assistance would be greatly welcomed.

PACKET CONTENTS

Conference Agenda

Sponsors List

Presenter Abstracts and Bios

Poster Titles

Scholarship and Poster Competition Winners

Participant Evaluation

**A survey will be emailed after the conference

Attendee List

Reception Drink Tickets