

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Jacob Barney

Virginia Tech
jnbarney@vt.edu

Jacob Barney is an Assistant Professor of invasive plant ecology in the Department of Plant Pathology, Physiology, and Weed Science at Virginia Tech. Jacob received his Ph.D. in Weed Ecology from Cornell University and did postdoctoral research at University of California Davis. Jacob works broadly with invasive plants in forested, roadside, and managed ecosystems with a research focus of applied ecology. Jacob also works with bioenergy crops and is evaluating the risk they pose in becoming invasive species in the Southeast. He is developing best management plans and risk assessment for bioenergy crop plants.



Latha Baskaran

Oak Ridge National Laboratory
baskaranl@ornl.gov

Latha Baskaran is a research scientist at the Environmental Science Division, Oak Ridge National Laboratory. Her research interests include bioenergy, water quality modeling, habitat modeling, and land-use/land-cover change. Over the past few years she has been working on environmental sustainability issues associated with bioenergy crops, specifically switchgrass. She has also worked extensively with the Soil and Water Assessment Tool (SWAT) hydrological model.



Steve Bobzin

Ceres Co.
sbobzin@ceres.net

Dr. Bobzin holds responsibility for technical strategic planning, intellectual property, licensing, and government grants at Ceres. Prior to accepting these responsibilities, Steve built and led a Metabolic Engineering and Analytical Chemistry R & D team at Ceres to study plant cell walls and improve the conversion of plant materials into biofuels and bioenergy, and to increase yields of important phytonutrients and pharmaceutical products in plants. Before joining Ceres in 2003, Steve Bobzin built natural products discovery programs for Galileo Pharmaceuticals and Monsanto's Consumer Health and Nutrition sector. There, Dr. Bobzin helped pioneer the application of hybrid analytical technologies, such as LC-MS and LC-NMR, to the identification of natural products from plants and other natural sources. Prior to these endeavors, he spent six years as part of the high-throughput screening team in the pharmaceutical discovery programs of G.D. Searle and Monsanto Company. Dr. Bobzin holds a B.S. in Chemistry from California State University, Fullerton, a Ph.D. in Oceanography for Scripps Institution of Oceanography, and is an adjunct professor at the University of Mississippi School of Pharmacy. Steve is a named inventor on over 20 patent applications, 4 issued U.S. patents, is widely published in peer-reviewed journals, and has been an invited speaker at scientific conferences worldwide.

Billions Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Craig Brandt

Oak Ridge National Laboratory
brandtcc@ornl.gov

Craig Brandt is a statistician in the Biosciences Division at Oak Ridge National Laboratory. He works with the Bioenergy Resource and Engineering Systems Group at ORNL to manage, summarize and analyze the resource estimates used in the Billion Ton Study. He is also responsible for packing the BTU data sets for submission to the Knowledge Discovery Framework and fulfilling special data requests for BTU collaborators.



Ranyee Chiang

Department of Energy
ranyee.chiang@ee.doe.gov

Ranyee Chiang is an American Association for the Advancement of Science Policy Fellow at the Department of Energy in the Office of Energy Efficiency and Renewable Energy/Biomass Program. She is supporting the Biomass Program on optimizing sustainability research, development, and deployment efforts in the U.S.; bioenergy's impact on sustainable development; and clean cookstove technologies to benefit health, livelihoods, and the environment. Previously, she was a postdoctoral researcher at New York University's Steinhardt School of Culture, Education, and Human Development, developing strategies to facilitate students' learning about scientific evidence. Before moving into science education research, she worked in computational biology, studying molecular evolution. Dr. Chiang earned a B.S. in computational biology at Brown University and a Ph.D. in biological and medical informatics from the University of California, San Francisco.



Chris Clark

Environmental Protection Agency
Clark.Christopher@epa.gov

Christopher Clark is a Research Scientist with the National Center for Environmental Assessment of the US Environmental Protection Agency. Chris has a background in terrestrial biogeochemistry, as well as plant community and ecosystem ecology. His research examines the impacts of global change on plant community structure and function, focusing on the effects of nitrogen deposition and climate change on the biodiversity of grasslands and subsequent impacts on nutrient storage and cycling. Chris recently finished a Science and Technology Policy Fellowship with the American Academy for the Advancement of Sciences, where he worked on a variety of issues including biofuels. With the EPA, Chris worked on the First Triennial Report to Congress on the Environmental Impacts of Biofuels in the United States, and now is involved with lifecycle analyses on the environmental impacts of biofuels from cellulosic feedstocks.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Helene Cser

North Carolina State University
hecser@ncsu.edu

Helene has an interest in renewable energy and her career focus has been on the opportunities and challenges relevant to the biomass industry. She has a BA in Environmental Studies from UNCW and a Master of Natural Resources in Assessment and Analysis from NC State University. She also has a graduate certificate in Geographic Information Science.

Helene has developed a comprehensive GIS-based database that contains a large selection of renewable energy resources but with a focus on various biomass resources within North Carolina and border counties of Virginia and South Carolina. Collaboration with various entities and extensive research provided the following biomass resources for the spatial database: forestry and agricultural, animal waste and biofuel facilities, biomass electricity generators, traditional wood using facilities and pellet mills, forestry working lands, timber investment holdings, announced biomass projects, and supporting infrastructure. She also has an interest in finding ways to utilize biomass feedstocks that are lacking markets and an interest in educating the public on the various biomass technologies available.

Helene currently specializes in customized forest resource supply assessments for government organizations, regional economic development offices, private companies and other organizations. The resource supply assessments are useful for: recruiting industry, determining feasibility of capital investments, examining sustainable harvest levels, establishing a biofuels industry, and providing information for policy development and evaluation.



Virginia Dale

Oak Ridge National Laboratory
dalevh@ornl.gov

Dr. Virginia H. Dale is a Corporate Fellow in the Environmental Sciences Division at Oak Ridge National Laboratory (ORNL) and Director of ORNL's Center for Bioenergy Sustainability. She was selected as the 2006 Distinguished Scientist for the Laboratory. She is also an adjunct professor at the University of Tennessee in the departments of both Forestry, Wildlife, and Fisheries and Ecology and Evolutionary Biology. She obtained her Ph.D. in mathematical ecology from the University of Washington. Her primary research interests are environmental decision making, landscape ecology, ecological modeling, and sustainability of bioenergy systems. Virginia has authored more than 190 published articles, is coauthor of the books Road Ecology and Hypoxia in the Northern Gulf of Mexico, and has edited five books. She has served on national scientific advisory boards for five federal agencies (the Environmental Protection Agency, US Departments of Agriculture, Defense, Energy, and Interior). Virginia is also Editor-in-Chief of the journal Environmental Management.



Daniel Dedrick

Sandia National Laboratory
dededri@sandia.gov

Daniel Dedrick is the manager of Hydrogen and Combustion Technologies at Sandia National Laboratories in Livermore, CA. Daniel is responsible for a variety of energy technology development areas including hydrogen, biofuels, waste-to-energy, and clean coal technologies. Daniel joined Sandia from UC Berkeley in 2000 and has a passion for clean energy technology R&D with international partners from academia, industry, and government.

Daniel manages a multidisciplinary team of scientists and engineers that perform research and development in clean energy and power technology. Expertise includes applied combustion, solid fuel combustion and gasification, advanced laser diagnostics, modeling and simulation, and materials chemistry. The team performs applied energy R&D in areas of national importance that are too risky and/or costly for industry investment alone.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Veronika Dornburg

Shell

veronika.dornburg@shell.com

Dr. Dornburg is a bioenergy expert working in the area for more than 10 years dealing with a broad range of subjects and stakeholders. Veronika applied her strong analytical and mathematical background to develop a profound understanding of bioenergy value chains, biomass availability and sustainability aspects. Currently, she is working as a researcher at Shell Westhollow Technology Center in Houston. Her specialties are bioenergy, GHG emissions mitigation, renewable energy, land use, project management, modeling, data analysis, and mathematics.



Mark Downing

Oak Ridge National Laboratory
downingme@ornl.gov

During the past 16 years, Dr. Downing has been involved in all aspects of renewable energy, and energy efficiency research and development with the U.S. Department of Energy, and Oak Ridge National Laboratory. Specifically, he assists the DOE Office of the Biomass Program manage the relationship between the Sun Grant Initiative, and other federal agencies and Land Grant institutions. He has played roles organizing and continuing efforts to develop Regional Feedstock Partnerships with the 5 Sun Grant Institutions. This work is crucial in moving renewable energy options forward in agriculture and forestry. He has contributed to DOE national efforts such as resource modeling and development of assessment activities for federal initiatives such as 30 by 30, and the 20 in 10. He also contributes to federal research cooperation with other DOE National Laboratories. Finally, he plays a cross-cutting role in automotive research with the DOE Office of Vehicle Technologies, managing government industry relations with the Society of Automotive Engineers, car companies, and the Department of Energy.



Laurence Eaton

Oak Ridge National Laboratory
eatonlm@ornl.gov

Laurence Eaton is a Research Scientist in the Bioenergy Resource and Engineering Analysis Group at Oak Ridge National Laboratory. He is trained as an economist and applies economic and GIS tools to energy and environmental research. He is actively involved in research to estimate biomass feedstock supply curves from forest and agricultural sources, energy price forecasting, and ecosystem valuation. He holds a B.A. in Economics and Environmental Studies from Washington and Lee University, and an M.A. in Economics from the University of Tennessee-Knoxville.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Mike Edgerton

Monsanto
mmedge@monsanto.com

Mike Edgerton is Monsanto's Technology Lead for Corn Ethanol and Quality Traits. Mike is responsible for supporting on-going business initiatives in biofuels and developing new opportunities in the bioenergy and feed markets. Mike holds a PhD in protein engineering and molecular genetics from the University of North Carolina, Chapel Hill and a B.A. in molecular biology from UC-San Diego. He started his career in bacterial genomics with Glaxo Wellcome in Geneva, Switzerland. He then moved to agriculture research when joining Dekalb Genetics to lead their functional genomics program in 1998. Mike has been involved in the development of Monsanto's biotech pipeline at Mystic, CT, Cambridge, MA and St. Louis MO.



Burt English

University of Tennessee
benglish@utk.edu

Dr. Burton C. English is a professor in the Department of Agricultural and Resource Economics at the University of Tennessee at Knoxville. He has 30 years of experience researching the adoption of new technologies, the impact of Agricultural Policies and its impact on sustainability issues, producers and consumers. He has conducted a multitude of studies on economic feasibility and the impact new technology will have on rural America.

He is a co-founder of AIM-AG, the Agri-Industry Modeling & Analysis Group at the University of Tennessee and BE AG, The Bio-Based Energy Analysis Group at the University of Tennessee. AIM-AG evaluates economic impacts from changes to the food or fiber sector, for example resulting from policy changes, using economic input/output analysis. The group also conducts economic feasibility analysis for a variety of project types. BE AG evaluates the impacts of new bio-based Industries on rural and economic development, economic and environmental impacts of growing, harvesting, storing, and delivering feedstock to a biorefinery, the impacts of business structure on economic feasibility along with impacts on soil chemistry resulting from increasing feedstock demand. Most of his research is conducted using economic analysis through a systems approach



Ken Goddard

University of Tennessee
kgoddar3@utk.edu

Ken Goddard has been with the University of Tennessee (UT) for 40 years and is now serving as UT Extension biofuels specialist based at the biorefinery in Vonore. He also worked for UT Extension in Hardeman and Henry counties. He was the Henry County Extension Director for 26 years. Goddard is proud of UT Extension's efforts to make no-till production the "rule rather than the exception" in Henry County. Ken is part of the UT Biofuels Initiative, introducing a new alternative bioenergy crop for Tennessee farmers.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Robin Graham

Oak Ridge National Laboratory
grahamrl@ornl.gov

Robin Graham (Ph.D. Forest Ecology, Oregon State University) has worked in the bioenergy field for the past 20 years largely on biomass resource assessment. She has extensive experience integrating economic and environmental factors into geographically -specific biomass resource assessment. A co-author on both the 2005 Billion Ton study and the 2011 Billion Ton Update Study.



Chad Hellwinckel

University of Tennessee
chellwin@utk.edu

Chad's work with the Agricultural Policy Analysis Center focuses on agricultural land use policies, climate change mitigation, biofuels analysis and defining appropriate long-term agricultural policy in a post peak-oil world. He maintains and uses computer models designed to estimate the local and national effects of implementing agricultural policies upon land-use, farm incomes and the environment. Current projects include building a geographically precise terrestrial carbon sequestration model which can also estimate potential quantities of biomass available from agricultural lands for energy uses. This model is being used to analyze the interactions between simultaneous climate change and biomass policies. Chad is also interested in the potential of regenerative agricultural systems in the post-peak oil, low-energy future. Regenerative agriculture refers to systems of agriculture that mimic the dynamics found in nature and allow natural systems to maintain their own fertility, sponsor their own energy needs, build soil, resist pests and diseases and be highly productive. Chad received a doctorate in geography at the University of Tennessee in 2008. He received his MS in Agricultural Economics from the University of Tennessee in 1996, and a BS in Economics and Urban Studies from St. Olaf College in 1991. Chad has worked at The Land Institute, in Salina Kansas, and served as a Peace Corps volunteer in Panama and with the US Forest Service in Arizona, New Mexico and Utah. He is also the founder of the Knoxville Permaculture Guild.



Richard Hess

Idaho National Laboratory
JRichard.Hess@INL.gov

As Manager for the Biofuels and Renewable Energy Technologies Department and Program Manager for the Biomass Program at the Idaho National Laboratory (INL), Dr. Hess oversees the basic research and applied engineering efforts of four major Research & Development Divisions: Energy and Technology Systems, Engineering Technology, Life & Earth Sciences, and Physical Sciences. The programs and initiatives associated with these divisions contribute significantly to INL's multi-program national laboratory status.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Daniel Inman

National Renewable Energy
daniel.inman@nrel.gov

Dr. Daniel Inman - Danny joined NREL in February 2008. His research interests include sustainability of feedstock production, impacts of feedstock production on composition and conversion, land-use change impacts related to ethanol production, and improved management practices for energy crop production. He is currently working as part of a multidisciplinary team from NREL's Strategic Energy Analysis and National Bioenergy Centers on a life cycle assessment of the ethanol mandates associated with the Energy and Independence and Security Act of 2007. As part of this team, Danny is primarily responsible for modeling the feedstock production systems. Danny also works with the Department of Energy's Office of the Biomass Program on several sustainability-related projects including quantifying direct and indirect land use change using dynamic modeling and optimizing the sustainability of the biochemical conversion process.



Sam Jackson

University of Tennessee
samjackson@utk.edu

Dr. Jackson holds a faculty position at the University of Tennessee, serving as a Research Assistant Professor in the University's Center for Renewable Carbon. In his faculty role, he is focused on the research, development, and commercialization of sustainable feedstock supply chains for the emerging bioenergy industry. He works with a variety of feedstocks including perennial grasses, short-rotation woody crops, forest materials, and other agricultural crops and residues.

He also serves as Genera Energy's Vice President for Feedstock Operations, Dr. Jackson has worked to develop sustainable and practical feedstock supply chains for bioenergy and bioproducts in Tennessee and the region.

Dr. Jackson received his doctoral degree in Natural Resources from the University of Tennessee.



Gary Jacobs

Oak Ridge National Laboratory
jacobsgk@ornl.gov

Gary K. Jacobs is the business manager of the Climate Change Science Institute at ORNL. He is also the director of ORNL's Environmental Sciences Division (ESD), an interdisciplinary research and development organization that focuses on developing strategies and technologies that will help sustain Earth's natural resources. A registered professional geologist in the state of Tennessee, Jacobs received a PhD in geochemistry from Pennsylvania State University in 1981 and has performed fundamental and applied research in a broad range of topics using laboratory, field, computational and theoretical methods throughout his career.

Jacobs served as senior geochemist for the Basalt Isolation Project at Rockwell Hanford Operations in Richland, Washington from 1981 to 1983 before joining ORNL as a research geochemist. He has since held a number of positions at the laboratory including leader of the Subsurface and Surficial Geochemistry Group, head of the Earth and Engineering Sciences Section, and Deputy Director of the ESD. Jacobs was named director of the ESD in 2004. Jacobs is an active member of the American Association for the Advancement of Science, the American Geophysical Union, and the Geological Society of America.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Yetta Jager

Oak Ridge National Laboratory
jagerhi@ornl.gov

Dr. Jager is an ecologist and modeler at ORNL. Her research seeks to understand environmental tradeoffs and complementarities among activities related to energy production, including hydropower, bioenergy, and petroleum. Yetta has published over 50 peer-reviewed papers, a subset of which quantify ecological benefits of energy alternatives so that they can be brought into the decision-making arena. In bioenergy, her team is integrating and developing models to understand how adding bioenergy crops into the agricultural landscape will influence water quality and aquatic biodiversity.



Doug Karlen

USDA - Arid Land Agricultural
doug.karlen@ars.usda.gov

Dr. Doug Karlen is a Supervisory Soil Scientist with the USDA-Agricultural Research Service (ARS) at the National Laboratory for Agriculture and the Environment (NLAE) in Ames, IA. He has been with the USDA-ARS for 33 years and currently serves as Research Leader for the Soil, Water, and Air Resources Research Unit at the NLAE. Doug also serves as co-leader for the ARS Renewable Energy Assessment Project (REAP) team, a multi-location effort focusing on sustainability of harvesting crop residues for bioenergy and as coordinator for a Regional Partnership through which REAP and university partners are assessing sustainability of corn stover harvest strategies. He served on a National Academy of Sciences Panel associated with the America's Energy Future project and was a contributing author for the "Alternative Liquid Transportation Fuels" chapter. Doug's research program uses soil quality assessment as a tool to quantify effects of soil and crop management practices including tillage, crop rotation, nutrient management, manure management and most recently crop residue removal on the sustainability of agricultural management systems. He is a native of Wisconsin and has his B.S., M.S. and PhD. degrees from the University of Wisconsin – Madison, Michigan State University, and Kansas State University, respectively. He is author or co-author for 185 refereed journal articles and more than 125 refereed proceedings, book chapters, and non-technical publications. Doug is a Fellow of the American Society of Agronomy, Crop Science Society of America, Soil Science Society of America and Soil and Water Conservation Society. He currently serves as Secretary General for the International Soil and Tillage Research Organization (ISTRO) and is recognized as an adjunct faculty member in the Agronomy Department at Iowa State University and in the Soil, Crop, and Entomology Department at Clemson University.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Martin Keller

Oak Ridge National Laboratory
kellerm@ornl.gov

Martin Keller was appointed to the role of Associate Laboratory Director at Oak Ridge National Laboratory (ORNL), on July 1, 2009. On November 1, 2010, a new directorate was formed, Energy and Environmental Sciences, and Dr. Keller was asked to lead this newly-established directorate. As Associate Laboratory Director of the Energy and Environmental Sciences Directorate, he is responsible for the energy, biological, and environmental research programs at ORNL supported by the U.S. Department of Energy (DOE), the Environmental Protection Agency, and the National Institutes of Health. The directorate includes four research divisions (Biosciences, Environmental Sciences, Energy and Transportation Science, and Measurement Science and Systems Engineering) and several research centers including the DOE BioEnergy Science Center and the Climate Change Science Institute. From July 2007 until February 2010, Martin also served as the Founding Director of the DOE BioEnergy Science Center. The mission of the BioEnergy Science Center is to make revolutionary advances in understanding and overcoming the recalcitrance of biomass to conversion into sugars, making it feasible to displace imported petroleum with ethanol and other fuels. Before being named Associate Laboratory Director at ORNL, Martin served as the Director of the Biosciences Division, ORNL. He joined ORNL in July 2006.

Between 1996 and 2006 Martin held a series of research management positions within Diversa Corporation, a publicly-traded biotechnology company in San Diego. Martin joined Diversa Corporation in June 1994 as a consultant to build and develop the microbiology expertise within Diversa, before joining Diversa Corporation full time in 1996. Being among the first 20 researchers gave Martin the opportunity to participate from the shaping of a start-up biotechnology company to a publicly-traded company with a staff of approximately 380 people. As the Director for New Technology Development and High Throughput Screening, Martin was responsible for Small Molecule Discovery and High Throughput Screening (HTS), including microbiology, robotic high throughput screening, high throughput ELISA, HTS whole cell assays, flow cytometry, biopanning, Multiple Displacement Amplification development and ultra high throughput screening development using miniaturized bead technology. Martin received his Ph.D. in Microbiology from the University of Regensburg, Germany.



Chev Kellogg

Alabama A&M University
chevkellogg@gmail.com

I received a B.E. from Vanderbilt University in chemical engineering and a Ph.D. from The University of Notre Dame in Biological Sciences. My past research topics include plant ecology, ecosystem restoration, climate change, and biogeochemical effects of mine wastes on ecosystems. I am currently working with Andy Scott (USFS) and Luben Dimov (Alabama A&M University) to determine sustainability of forest biomass harvest on southeastern U.S. forest soils.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Michael Keyes

Scientific Certification Systems
mkeyes@scscertified.com

Dr. Michael Keyes has over 25 years of professional experience in agriculture and forestry and has developed new agriculture certification programs throughout the Americas.

As principal architect for the VeriFlora and the Fair Labor Practices certification programs, Dr. Keyes has been the driving force behind SCS' launch of sustainability programs in agriculture and agro-forestry, spearheading the team's technical efforts, benchmark setting, best management practices, program metrics and scorecards for growers and handlers. His efforts have led to many of the most sophisticated greenhouse and nursery growers obtaining VeriFlora and Fair Labor Practices certification.

Dr. Keyes has also served as a team leader on SCS evaluations of forest management operations totaling more than 1.2 million acres. Until 2007, Keyes served as lead auditor and trainer for Starbucks's C.A.F.E. Practices program.

Before joining SCS, Dr. Keyes worked for the World Bank's sustainable agriculture program and served as a university researcher in Latin America.

Ph.D., Forest Ecology; University of Washington, Seattle, WA

M.S., Forest Ecology; University of Washington, Seattle, WA

B.S., Natural Resources and Soil Science; University of California, Berkeley, CA

Degree certificate, Agroforestry, Centro Agronómico Tropical de Investigación e Enseñanza, Turrialba, Costa Rica



Keith Kline

Oak Ridge National Laboratory
klinekl@ornl.gov

Keith conducts research on domestic and international land-use dynamics, potential for biofuel feedstock production, certification and standards for sustainable land use, and current and future projections of effects of different production scenarios based on empirical data analysis and models. Past work includes tropical forest conservation program design and management, research on the potential for commercial forestry to supply a biofuel industry in the Southeast U.S., and environmental program monitoring and evaluation.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Kristi Kubista-Hovis

U.S. Department of Agriculture
kristi.kubista-hovis@wdc.usda.gov

Kristi Kubista-Hovis is a Senior Policy Advisor for the Rural Utility Service's Electric programs.



Matt Langholtz

Oak Ridge National Laboratory
langholtzmh@ornl.gov

Dr. Matthew Langholtz's primary research interests are in biomass resource economics, short-rotation woody crops, and bioenergy from forest resources. He has worked a decision support system to evaluate short-rotation woody crop economics, valuation of non-market externalities, and developing biomass supply curves for the southeast US. His current research involves biomass feedstock supply and demand, and sustainable forest management approaches to providing bioenergy feedstocks. Background includes agroforestry extension in Latin America, and production of herbaceous and woody cellulosic biomass crops.



Zakiya Leggett

Weyerhaeuser, Co
zakiya.leggett@weyerhaeuser.com

Zakiya Leggett is originally from Memphis, Tennessee. She received her B.S. in Forest Resources from Tuskegee University and her Masters of Forest Management from Duke University. She graduated from NC State University with her Ph.D. in Forest Soils.

Her research experience is mainly focused in forest soils, specifically C and N cycling. She has also been very involved in environmental education through mentoring programs and volunteer work.

Zakiya currently works as a sustainability scientist for Weyerhaeuser Company Southern R&D. Her duties include designing and executing research studies to make operational recommendations that enhance the sustainability and productivity of loblolly pine plantations. She lives in Raleigh, NC with her husband and two daughters.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



David Lightle

USDA- Natural Resources
dave.lightle@lin.usda.gov

Dave is a retired agronomist at the USDA Natural Resources Conservation Service, National Soil Survey Center in Lincoln, Nebraska, now working as a part time contract employee for NRCS and also is involved in private consulting on soil erosion models and their use.

Dave was formerly the national database manager for the Revised Universal Soil Loss Equation (RUSLE2) and the Wind Erosion Prediction System (WEPS) models and was lead contact for the RUSLE2 model for NRCS. He developed the Soil Conditioning Index, the Soil Tillage Intensity Rating and the Crop History Inventory Tools.

As a private consultant he also helped develop and conduct training sessions for the Construction site version of RUSLE2 for use by private engineers and regulators. He also developed a special version of RUSLE2 and database for use by the California Department of Transportation (Caltrans).

Dave has contributed to various studies over the past 16 years involving the sustainability of harvesting biomass for ethanol production including the Billion Ton Update.



Allen McBride

Oak Ridge National Laboratory
mcbrideac@ornl.gov

Allen McBride works with the Center for Bioenergy Sustainability at Oak Ridge National Laboratory in Oak Ridge, Tennessee. Recent work includes identifying indicators of environmental sustainability for bioenergy systems relating to soil quality, water quality and quantity, greenhouse gas balance, biodiversity, air quality, and productivity. He is also involved in the exploration of empirical methods to assess relationships between bioenergy systems and land-use change. He has a B.A. in biology from Swarthmore College and an M.A. in forest ecology from Duke University.



Gerard Moore

U.S. Department of Agriculture
gerard.moore@wdc.usda.gov

Gerard (“Gerry”) Moore is Branch Chief of Energy Forecasting with the Rural Utilities Service (RUS) of the USDA. He has worked in the Electric Staff Division of RUS since 2008. Gerry also has responsibilities in energy efficiency and renewable energy for RUS. Mr. Moore has been in the electric power industry since 1991. He was previously with Constellation Energy as project manager mainly and electrical engineer in the area of power generation. Mr. Moore has a bachelor of engineering degree from Stevens Institute in Hoboken, N.J. and a Masters degree in technical management from The Johns Hopkins University in Baltimore, MD.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Aaron Myers

Oak Ridge National Laboratory
myersat@ornl.gov

Aaron Myers has his Master's of Science from the University of South Carolina and has been a member of the Geographic Information Science and Technology Group at ORNL since 2006. His work focuses on building web-accessible geospatial applications and services such as the Bioenergy Knowledge Discovery Framework (<https://bioenergykdf.net>). Mr. Myers has also done research into collecting Volunteered Geographic Information from the general public to augment data collection efforts by scientists.



Richard Nelson

Kansas State University
nelson@ksu.edu

Richard Nelson is currently program coordinator with the Center for Sustainable Energy at Kansas State University and also heads Enersol Resources, a private energy, environmental, and market assessment consulting firm with over 21 years experience in the biofuels/bioenergy field and over 20 publications on biomass, energy, environment, sustainability, and economics and marketing. He has served as a consultant to the National Renewable Energy Laboratory, Oak Ridge National Laboratory, Idaho National Laboratory, Western Governors' Association, and the National Biodiesel Board concerning biofuel development, marketing, and utilization. He has also served on a California Air Resources Board expert workgroup concerning bioenergy/biofuels development and land use and has served on the International Energy Agency Task 40 which is concerned with sustainable bioenergy trade.



Jamie Nettles

Weyerhaeuser, Co
jami.nettles@weyerhaeuser.com

Dr. Nettles earned her PhD in Civil and Environmental Engineering from the University of Alabama. She has 15 years experience with Weyerhaeuser Company, in Southern Timberlands. Her primary interest is in large watershed effects of silvicultural effects on water quantity and quality. She has expanded work into the effects of biofuel growth and harvest in a forest setting.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Esther Parish

Oak Ridge National Laboratory
parishes@ornl.gov

Esther Parish is a research scientist with the Oak Ridge National Laboratory's Center for BioEnergy Sustainability (CBES). Her interests include bioenergy sustainability; land-use change; and impacts, adaptation, and vulnerability associated with climate change. Ms. Parish has worked in the government arena for over ten years on projects involving the US Department of Energy, the Tennessee Valley Authority, the US Environmental Protection Agency and the US Army Corps of Engineers. She holds a BS in geology and geophysics from Yale University and an MS in geography from The University of Tennessee. In 2003, Ms. Parish received an international award for excellence in sharing and demonstrating geographic learning for sustainable development.



James Perdue

USDA - Forest Service
jperdue@fs.fed.us

James H. Perdue – Jim a Senior Biological Scientist with the US Forest Service, Southern Research Station is located in Knoxville, TN. His current research portfolio focuses on sustainable biomass and bioenergy production and forecasting how a bio-economy may transition and alter the technology, markets, and educational skills necessary to be competitive in the business of agriculture and forestry.

Jim has spent over 33 years with the Forest Service in a variety of positions. His career has taken him across the country dealing with issues of natural resource management and policy; financial, economic and resource evaluation; organizational re-engineering and research. He has had the good fortune to serve in each branch of the Forest Service developing a unique combination of leadership, management and resource assessment experience.

Throughout his career, he has accumulated an outstanding slate of accomplishments and recognition including a National Shell Oil Fellowship, a Council on Environmental Quality Award for Excellence in Environmental Planning, and numerous Merit Awards for National and Regional Leadership, and recently an Innovator of the Year Award from the Southern Governors Growth Policy Board.



Bob Perlack

Oak Ridge National Laboratory
perlackrd@ornl.gov

Bob Perlack is a senior research scientist in the Environmental Sciences Division of Oak Ridge National Laboratory. Bob currently leads the resource assessment task for the ORNL biomass program. He has been at ORNL for over thirty years where he has conducted research primarily on the evaluation and application of renewable energy technologies in the U.S and internationally. Bob co-led the recently released update to the billion-ton study. Bob has a Ph.D. in Resource Economics and is author/coauthor of over 100 refereed articles and coauthor of a book on economics for environmental managers. Prior to coming to ORNL he was an assistant professor at the University of Massachusetts.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Timothy Rials

University of Tennessee
trials@utk.edu

A native of McComb, Mississippi, Tim Rials received his undergraduate degree in Forestry from Mississippi State University in 1980. He then moved to Virginia Tech where he earned both Masters (1983) and Ph.D. (1986) degrees from the Department of Wood Science and Technology. Tim joined the faculty at the University of California-Berkeley as assistant professor, conducting research on renewable materials. In 1988, he moved to Louisiana accepting a research scientist position with the USDA-Forest Service, Southern Research Station in Pineville, and later serving as Project Leader of the wood utilization research unit. Five years later he moved to The University of Tennessee, accepting the position of Professor in the Department of Forestry, Wildlife, and Fisheries, and Director of the Forest Products Center. At UT, Tim expanded his research into vibrational spectroscopy of wood and related materials while working to coordinate the Forest Products Center's overall research program and vision. In 2005, he assumed the role of director for the Southeast Sun Grant Center, effectively broadening the research effort to consider bioenergy, biofuels, and bioproducts. Recently (2010), Dr. Rials accepted the position of director with the newly established Center for Renewable Carbon, to further the collaborative research framework in the UT Institute of Agriculture and coordinate research toward alternative biofuels and advanced materials from forest and agricultural biomass. A fellow in the International Academy of Wood Science and member of the American Chemical Society, Tim continues working to advance the efficient use of wood and biomass to strengthen the bioeconomy in Tennessee and the Southeast.



Caroline Ridley

Environmental Protection Agency
ridley.caroline@epa.gov

Dr. Caroline Ridley is an ecologist with the US Environmental Protection Agency. She provides scientific support within the Agency for water and energy policy decisions that are likely to impact ecological communities. Most recently, she was a AAAS Science Technology Policy Fellow. Caroline received her PhD in Plant Biology from the University of California Riverside, where she studied the evolution of weeds, and her BA in Biology from Grinnell College.



David A. Scott

USDA - Forest Service
andyscott@fs.fed.us

Andy Scott is a Research Soil Scientist with the Ecology and Management of Southern Pines work unit of the USDA Forest Service Southern Research Station. He is stationed at Alabama A&M University in Huntsville, AL. He is the Chairperson of the international Long-Term Soil Productivity Study, which is composed of over 100 field locations across the US and Canada and is designed to test hypotheses regarding organic matter removal and soil compaction on soil and forest function. He is also a leader in the SRS' Biomass Research Initiative. His other research interests include shortleaf pine restoration, agroforestry, and fire ecology. He received a B.S.F. from Purdue University, an M.S. from Texas A&M University, and a Ph.D. from Virginia Tech, where he studied short-rotation woody crop management.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Nagendra Singh

Oak Ridge National Laboratory
singhn@ornl.gov

Nagendra Singh is research staff in the Geographic Information Sciences and Technology group in the Computational Sciences and Engineering Division at the Oak Ridge National Laboratory. His research interest includes consequences and impacts of land use land cover change and sustainability of bioenergy. He also works in the areas of critical infrastructure and population distribution modeling.



Ken Skog

USDA - Forest Service
kskog@fs.fed.us

Ken Skog is Project leader for Economics and Statistics Research at the US Forest Service Forest Products Laboratory, Madison, WI. Economics research of the unit provides 50 year projections for U.S. and global forest products markets for the Forest Service RPA Assessment. Statistical research provides methods to enhance the integrity and efficiency of FPL research. Life cycle assessment of wood-based biofuels technologies is being done with the Consortium for Research on Renewable Industrial Matierals (CORRIM) and work is beginning on Environmental Product Declarations for wood products used in construction. Recent personal research includes: 1) evaluating the impact U.S. wood energy consumption on U.S. and global forest products markets and forest carbon and wood products carbon storage; 2) evaluating regimes of forest management and products use to enhance carbon storage and offsets; 3) estimating potential wood biomass supply from forests for the Billion ton supply update and for the USDA/ DOE national biorefinery siting model. Recent work on carbon estimation and accounting includes: lead author for the 2006 IPCC Guidelines for countries to estimate HWP carbon for sinks and emissions reports and co-author (with NCASI) of a carbon footprint for U.S. forest sector. Ken has a a Phd in Forest Economics from Michigan State University.



Ray Smith

Environmental Protection Agency
Smith.Raymond@epamail.epa.gov

Ray Smith is a Chemical Engineer within the Systems Analysis Branch in the Office of Research and Development at the U.S. EPA. He obtained his PhD in Chemical Engineering in the area of process design from the University of Massachusetts Amherst. Ray has worked for the EPA for over 10 years with focus areas including the evaluation of green chemistries and technologies, chemical process design and optimization, life cycle assessment, and recycle process design for industrial ecology. He has also worked on biofuel analysis projects and is currently a lead for the Sustainable Supply Chain Design for Biofuels team. This project is analyzing various environmental impacts, indicators and sustainability metrics for biofuel supply chains from feedstock production through end use. In addition, the project considers the expansion of biofuel supply chains, different ways the infrastructure could develop, and how the form of the supply chain could influence impacts, indicators and sustainability metrics.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Lesley Snowden-Swan

Pacific Northwest National
lesley.snowden-swan@pnnl.gov

Lesley Snowden-Swan joined PNNL in 1991. During her career she has contributed to the development of pollution prevention and waste minimization capabilities at the Laboratory. She has conducted, managed, and marketed projects regarding pollution prevention, waste minimization, environmental compliance and sustainability issues applied to process technology development and assessment. She is currently involved in projects supporting the DOE's Office of Biomass Programs, including techno-economic analysis and sustainability metrics development for biofuels. Ms. Snowden-Swan has authored or co-authored 18 publications, holds one patent, and one R&D 100 Award.



Bryce Stokes

Department of Energy
bryce.stokes@go.doe.gov

Dr. Stokes is a Senior Advisor with CNJV, a contractor to the U.S. Department of Energy at the Golden Field Office. He is providing support to the DOE Biomass Program in Washington DC. He received his BS and MS from Mississippi State University in Engineering and PhD from Auburn University in Forestry. He worked as a Forest Engineer for Weyerhaeuser Company prior to joining the USDA Forest Service in Auburn, Alabama as a Research Engineer. He later served as Project Leader for the Engineering Unit at Auburn and then served as National Program Leader for Forest Operations Research as part of the Resource Use Sciences Staff in the R&D Washington Office. His 30 years of research focused on harvesting machine and system design and management; biomass recovery and utilization; reducing forest operations environmental impacts; and, specialty systems for pine thinning and wet area harvesting. During his career he also had staff co-responsibility for biomass, carbon sequestration, climate change, and sustainability with his Agency, Department, and in federal interagency working groups. He had co-responsibilities in industrial partnerships for forest productivity and life-cycle analyses. He previously served in a support role for the USDA Energy Council and is Past Chair of the USDA Biobased Products and Bioenergy Coordination Council and the Federal Working Group on Woody Biomass Utilization. He is active in the Council on Forest Engineering, Forest Products Society, and the American Society of Agricultural and Biological Engineers. He served as a U.S. representative to International Energy Agency tasks on conventional forestry and short-rotation crops for energy 10 years. He has over 140 scientific and technical publications. He co-led the update of the Billion Ton Report.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Timothy Theiss

ORNL - National Transportation
theisstj@ornl.gov

Tim Theiss is currently serving as the Group Leader for the Oak Ridge National Laboratory's Fuels and Engines Research Group, one of the larger comprehensive internal combustion engine research and development groups among the Department of Energy national labs. He has over 15 years of experience in program development and program management at ORNL in various technical areas, mostly related to power systems and reciprocating engine-based power generation. Most recently, Tim's work has involved liquid and gaseous alternative fuels, including biofuels for transportation and stationary power applications. Tim has been very active in the ORNL intermediate ethanol blend effort for the past few years interacting with DOE Office of the Biomass Program and Office of Vehicle Technology, as well as other stakeholders.



Kurt Thelen

Great Lakes Bioenergy Research
thelenk3@msu.edu

Dr. Thelen's research program is focused on bioenergy feedstock production issues pertinent to the Great Lakes Region. As a cropping systems agronomist, Dr. Thelen has conducted research on a wide range of crop production aspects including: bio-energy crop production, utility and assessment of marginal lands for biofuel crop production; management, landscape and soil effects on biofuel crop quality; development of an NIR calibration equation for quantifying ethanol yield from corn grain; carbon cycling in complete biomass removal cropping systems; tillage systems, weed control, rotational aspects, in-field plant arrangement, soil variability affects on yield, environmental aspects, and precision agriculture. In addition, Dr. Thelen developed and teaches CSS 467, BioEnergy Feedstock Production.

<http://www.msu.edu/~thelenk3/>



Kelly Tiller

University of Tennessee
ktiller@tennessee.edu

Dr. Tiller is the President and CEO of Genera Energy LLC, an integrated biomass supply chain services company providing feedstock solutions for the biofuels, biopower, and biomaterials industries. Dr. Tiller is also a faculty researcher with the University of Tennessee's Center for Renewable Carbon. Dr. Tiller was instrumental in the development and implementation of a comprehensive farm fields-to-filling stations cellulosic ethanol program in Tennessee, a partnership of the State of Tennessee, the University of Tennessee, Genera Energy, and DuPont Danisco Cellulosic Ethanol. Kicked off with \$70.5 million in state funding in 2007, and with total funding exceeding \$110 million, the Tennessee Biofuels Initiative integrates a demonstration-scale cellulosic ethanol biorefinery fueled by switchgrass grown on more than 5,000 acres near the biorefinery. Genera is currently constructing the Biomass Innovation Park, an integrated research campus for demonstrating commercial scale biomass handling and processing, spanning the biomass supply chain between the farm gate and the biorefinery gate.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Peter Tittmann

University of California, Davis
pwtittmann@ucdavis.edu

Dr. Tittmann earned his B.A. in Environmental Studies from the University of California, Santa Cruz, and his Ph.D in Geography from the University of California, Davis. Peter has research experience in remote sensing, geographic information systems, and geospatial application development. His research focuses on spatial economic modeling and the application of geospatial technologies to industrial bioenergy and carbon sequestration. He has expertise in facility citing, supply chain optimization, resource assessment, and sustainability aspects of biofuels development including land use change and life cycle emissions from bioenergy pathways, and forest carbon storage/analysis. He is currently a post-doctoral researcher at the Energy Institute and the Institute for Transportation Studies at the University of California, Davis



Anthony Turhollow

Oak Ridge National Laboratory
turhollowaf@ornl.gov

Anthony Turhollow is a staff economist at the Oak Ridge National Laboratory in Oak ridge, Tennessee. He has a PhD in Agricultural Economics from Iowa State University and has been working in the field of biomass for energy since 1980. He was one of the authors on the 2005 Billion Ton Study and also an author on the recently released update of the Billion Ton Study. He is an expert on the economics of and energy input to energy crop production.



Rocio Uria-Martinez

Oak Ridge National Laboratory
uriamartiner@ornl.gov

Rocío Uría-Martínez, Ph.D., is currently a research staff member in the Environmental Sciences Division at ORNL. She is an agricultural and resource economist whose focus is modeling energy systems and markets with emphasis in the interaction among engineering, economic and regulatory aspects. She is currently working on a model of the biofuel supply chain that emphasizes energy security and sustainability aspects. Estimation of value and costs of non-generation resources (energy storage and demand response) for improving the reliability of the electric system is also among her interests. Previously, she worked for Iberdrola, a Spanish utility, as an energy market analyst.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Utpal Vasavada

U.S. Department of Agriculture
vasavada@ers.usda.gov

Utpal Vasavada is Chief of the Production Economics and Technology (PET) Branch in the Resource and Rural Economics Division and the ERS Bioenergy Coordinator. The PET Branch conducts a program of economic research addressing the determinants and effects of production decisions, including the adoption of existing and emerging agricultural production practices, management systems, and technologies. Utpal joined ERS in 1993 and has served in numerous capacities: as a visiting scholar, an economist, a section leader, a senior economist, and currently as Branch Chief. Before joining ERS, Utpal held academic appointments at the University of Georgia and Laval University. Utpal received a Ph.D. and an M.S. degree from the University of Maryland, College Park.



Thomas Voigt

University of Illinois
tvoigt@illinois.edu

Tom Voigt is Associate Professor and Extension Specialist In the Department of Crop Sciences at the University of Illinois, Urbana-Champaign, and has worked in campus-based positions since 1987. Over that time, Voigt has conducted field evaluations of grasses and forbs for landscape use and turfgrass species, cultivars, and management programs. He was awarded the 2002 Faculty Award for Excellence in Extension, from the University of Illinois College of Agricultural, Consumer and Environmental Sciences and the 2002 Distinguished Service Award from the Illinois Turfgrass Foundation. Since 2002, he has studied the selection, establishment, and agronomy of biomass feedstocks, particularly *Miscanthus x giganteus* and switchgrass. Voigt leads the Energy Biosciences Institute Feedstock Production/Agronomy Program and the Department of Energy-funded North Central Sun Grant Feedstock Partnership *M. x giganteus* evaluations. In these roles, he coordinates biomass feedstock research projects with collaborators in 12 states. Voigt contributed the Giant *Miscanthus* portion of the U.S. DOE's U.S. Billion Ton Update: Biomass Supply for a Bioenergy and Bioproducts Industry published in 2011. Before joining the U. of I., he taught horticulture courses at Joliet Junior College and vocational horticulture at Logan Correctional Center in Lincoln, Illinois. Tom holds B.S., M.S., and Ph.D. degrees in Horticulture from the U. of I.



Erin Webb

Oak Ridge National Laboratory
webbeg@ornl.gov

Erin Webb joined ORNL in 2007 to provide engineering systems modeling expertise to analysis of bioenergy feedstock supply systems. Currently, Erin works on a variety of projects to better understand the impacts of biomass supply chain design on costs, the environment, energy security, and feedstock quality. In 2009, Erin was on detail at the DOE Biomass Program in Washington, DC as a technical advisor. Prior to joining ORNL, Erin's graduate research at the University of Kentucky and the University of Florida focused on modeling of interactions between plants or animals with their environment. Her projects included modeling of water uptake of plant cuttings and simulation of plant performance in a low-pressure greenhouse on Mars. Her honors include graduate fellowships from NSF and NASA.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



Mark Wigmosta

Pacific Northwest National
mark.wigmosta@pnnl.gov

Dr. Wigmosta is a Chief Scientist at Pacific Northwest National Laboratory with over twenty five years of professional experience in distributed watershed hydrology, land-use management, hydroclimatology, snow processes, and surface and subsurface contaminant transport. He has directed numerous studies to evaluate the effect of land use, energy production, and climate change on watershed hydrology and water resources. Ongoing research includes the study of biofuel production potential and resource constraints. Prior to joining Pacific Northwest National Laboratory, Dr. Wigmosta managed the Snohomish County Basin Planning and River Improvement Programs, served as a hydrologist for the King County Basin Planning Program, and managed the Seattle geology section of Ecology and Environment, Inc.



Lynn Wright

Oak Ridge National Laboratory
wrightltd@gmail.com

Lynn Wright is presently has an Adjunct Faculty position in the Biosystems Engineering and Soil Science Department at the University of Tennessee, and is also sole proprietor of WrightLink Consulting, a company formed to perform research and analysis work for companies and government agencies developing biomass energy technology. Current consultant work includes “hands on” experience with hybrid poplar production in Minnesota. Previous work experience includes nearly 30 years in the Environmental Sciences Division of Oak Ridge National Laboratory (ORNL) where she managed Woody Crops research for the U.S. Department of Energy’s Biomass Program. She served as a U.S. representative to several International Energy Agency task groups related to biomass crops between 1987 and 2003. Lynn is lead or co-author on more than 85 articles on the topic of bioenergy feedstocks, both woody and herbaceous, has contributed to a Biomass Energy Data Book available online, maintains the website for the Short-Rotation Woody Crops Operations Working Group (www.woodycrops.org) and continues to work with Oak Ridge National Laboratory staff to produce publications on biomass feedstocks.

Billion Ton Study: What can be Learned about Bioenergy Sustainability?

Participant Summary

September 28 - 30, 2011



May Wu

Argonne National Laboratory
mwu@anl.gov

Dr. May Wu is an environmental scientist, currently leading an effort of biofuel water sustainability analysis at Argonne National Laboratory. Her research area covers water footprint analysis of biofuel, petroleum oil, and electricity; large-scale watershed modeling for biofuel feedstock production; and life cycle energy and emission assessment for biofuels. Since 2004, May has participated in several major efforts lead by U.S. DOE to estimate LCA of a number of biofuels produced via conventional and advanced conversion technologies (corn ethanol, corn butanol, bio-syngas, sugarcane ethanol, ethanol from switchgrass, corn stover, and forest wood residues), examined corn ethanol co-product displacement ratio, and conducted LCA for various ethanol plant types. Dr. Wu serves as a technical support to DOE Office of Biomass Program responsible for water issues related to biofuel sustainability. She has served as an expert advisor to the Water Working Group of Council on Sustainable Biomass Production (CSBP) and supports the Sustainability Criteria development by National Biomass R&D Board, Sustainability Interagency Working Group (S-IWG). Prior to current position, May was a senior research microbiologist at Nalco Chemical. May conducted her postdoctoral work at Argonne National Laboratory. Dr. Wu holds several U.S. patents and a dual Ph.D. in Environmental Engineering and Environmental Toxicology from Michigan State University.



Yao Yin

University of Illinois
woshiyinyao@gmail.com

Yao Yin, Energy Biosciences Institute at University of Illinois. Yao is a new postdoc at Energy Biosciences Institute at University of Illinois and is interested in life cycle analysis of bioenergy. She received her Ph.D. in Environmental Sciences from Oregon State University, studying barriers and opportunities of community wind energy. She also has a Master of Public Policy degree in Environmental Policy, a Master of Science in Molecular Cellular Biology, and a Bachelor of Science in Biological Sciences.
