

Sustainability of Bioenergy Systems: Cradle to Grave

Participant Summary

| Name | Affiliation | Office | Phone | Email | Research Description |
|-----------------|-------------|-------------------------------------|--------------|------------------------|---|
| Barbery, Andrea | U.S. EPA | Office of Undergrou | 703.603.7137 | barbery.andrea@epa.gov | Compatibility of existing infrastructure with bio-based motor fuels |
| Baskaran, Latha | ORNL | Environmental Science Division | 8655761397 | baskaranl@ornl.gov | My work involves studying the environmental sustainability issues related to bioenergy feedstock (specifically switchgrass) production. This includes modeling changes to water quality, habitat of species and biodiversity due to bioenergy feedstock related changes to the land. |
| Bielicki, Jeff | ORNL | Energy & Transportation | 865-946-1472 | bielickijm@ornl.gov | energy technology deployment interactions between the engineering, environmental, political, social, and economic systems. |
| Bruins, Randy | U.S. EPA | Office of Research and Development | 513-569-7581 | bruins.randy@epa.gov | Co-leader of Future Midwestern Landscapes Study, a study of ecosystem services in the Midwestern US. Examining current conditions, the business-as-usual biofuel-targets future prescribed by the EISA, and a future with an emphasis on agricultural conservation practices. |
| Curran, Scott | ORNL | Energy & Transport | 865-974-1522 | curransj@ornl.gov | Student produced biodiesel at the University level. |
| Dale, Virginia | ORNL | Center for Bioenergy Sustainability | 865-576-8043 | dalevh@ornl.gov | Dr. Virginia H. Dale's primary research interests are in a landscape design for bioenergy, environmental decision making, land-use change, landscape ecology, and ecological modeling. She has worked on developing tools for resource management, vegetation recovery subsequent to disturbances; effects of climate change on forests; and integrating socioeconomic and ecological models of land-use change. Her current research involves working closely with resource managers to identify sustainability indicators for bioenergy at different scales and to design models that can project regional changes in environmental conditions. |
| Das, Sujit | ORNL | Energy & Transportation | 8659461222 | dass@ornl.gov | Involved in the assessment of infrastructure requirements for the ethanol transportation fuel supply chain. |
| Davison, Brian | ORNL | Biosciences Divisio | 865-574-0955 | davisonbh@ornl.gov | |

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| Daw, Stuart | ORNL | Energy & Transportation Science Division | 865-946-1341 | dawcs@ornl.gov | A native of Florida, Dr. C. Stuart Daw (P.E.) received his B.S. in Chemical Engineering from the University of Florida and his M.S. and Ph.D. degrees in Chemical Engineering from the University of Tennessee. He is currently a UT-Battelle Corporate Fellow in the Engineering and Transportation Science Division of the Oak Ridge National Laboratory (ORNL) and an adjunct faculty member in both Chemical and Mechanical Engineering at the University of Tennessee. He has worked at ORNL since 1979, primarily in combustion, waste treatment, emissions controls, and applications of chaos theory. Prior to that time he was employed by DuPont where he specialized in chemical reactor modeling and process development. Dr. Daw has over 150 publications on combustion, multi-phase transport phenomena, reactor modeling, and nonlinear dynamics. Dr. Daw is a member of the American Institute of Chemical Engineers, the Society of Automotive Engineers, the Combustion Institute, and is the ORNL representative to the American Flame Research Committee. He currently co-leads the DOE Crosscut Lean Exhaust Emissions Reduction Simulation (CLEERS) activity and is co-leading efforts to expand ORNL's research in thermochemical utilization of biomass. |
| Downing, Mark | ORNL | Environmental Science Division | 576-8140 | downingme@ornl.gov | Bioenergy Program Team Lead responsible for managing science and research, and staff. |
| Efroymsen, Rebecca | ORNL | Environmental Sciences Division | 828-505-1673 | efroymsenra@ornl.gov | My research in bioenergy sustainability includes sustainability indicator development, land-use considerations, biodiversity effects, and valuation of ecosystem services. Other research relates to ecological risk assessment and management for wind energy and activities at military installations. |
| Garten, Charles | ORNL | Environmental Science Division | 865-531-0151 | gartenctjr@ornl.gov | Soil carbon and nitrogen dynamics beneath switchgrass plantations including quantification of nitrogen budgets for sustainable biofuel production. |
| Graham, Robin | ORNL | Environmental Science Division | 865-576-7756 | Grahamrl@ornl.gov | manage ORNL's biomass program. have competence on biomass resource assessments and carbon sequestration under energy crops |
| Hartzell, Evelyn | U.S. EPA | Office of Research and Development | 513-569-7728 | hartzell.evelyn@epa.gov | Verification of commercial-ready, environmental technologies with the potential to improve human health and the environment, including monitoring technologies, bioenergy systems, waste-to-energy conversion, and oil & gas production/transmission. Current examples include pre-verification assessment of gasification systems for energy recovery from wet waste streams and tank leak detection devices for ethanol blends. |

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| Hilliard, Michael | ORNL | Center for Transportation Analysis | (865) 576-5337 | hilliardmr@ornl.gov | We are refining a model of the dynamic evolution of the cellulosic biofuel supply chain that considers many of the detailed spatial issues of biomass selection, refinery location, transportation routes, and demand satisfaction. The evaluation of the model's solutions is tied to economic, social and environmental impacts. |
| Huff, Shean | ORNL | Energy & Transportation | 865-946-1333 | huffsp@ornl.gov | Working on ethanol fueled vehicle research and a part of the ORNL Sustainable Campus Initiative as it relates to transportation. |
| Impellitteri, Christopher | U.S. EPA | National Risk Mana | 513-487-2872 | impellitteri.christopher@ | Impacts from cellulosic-based biofuel feedstocks on water resources. |
| Jager, Yetta | ORNL | Environmental Scie | 865/574-8143 | jagerhi@ornl.gov | Water quality and biological impacts |
| Johnson, Timothy | U.S. EPA | Office of Research and Development | 919-541-0575 | johnson.tim@epa.gov | I am interested in how broader energy system drivers affect regional biomass feedstock demand and biofuels production, and how the biofuels supply chain, in turn, impacts both direct and indirect fossil energy use, as well as criteria pollutant and greenhouse gas emissions. My work also seeks to understand how regional variation in the spatial distribution of biomass feedstock supplies, refinery locations, transportation infrastructure, and demand centers impacts distribution costs, energy needs, and emissions. |
| Kaplan, Ozge | U.S. EPA | Office of Research and Development - National Risk Management and Research Laboratory | 919-541-5069 | kaplan.ozge@epa.gov | I am part of a team that develops and applies regional energy-economic-environment model, US EPA MARKAL, to assess the effects of technological and social change on air emissions. I have been involved with the development of the biofuel, biomass and bioenergy component of the US EPA MARKAL model over the last 3 years. We examine the evaluation of renewable energy alternatives specifically biofuels and biomass in the context of broader energy systems. |
| Kass, Mike | ORNL | Energy & Transport | 865-946-1241 | kassmd@ornl.gov | |
| King, Anthony | ORNL | Environmental Science Division | 865-241-3888 | kingaw@ornl.gov | carbon cycle and biosequestration, climate change and sustainable land-use |
| Kline, Keith | ORNL | Environmental Science Division | 865-574-4230 | klinekl@ornl.gov | Research has focused on sustainability indicators, the drivers of land-use change, biomass resource assessments and biofuel feedstock potentials around the world. Also, helped plan and document the results from the Land Use Change and Bioenergy Workshop in Tennessee (May 2009), examining data, modeling and other issues contributing to uncertainty in land-use change calculations required for life-cycle assessment. |
| Kremer, Fran | U.S. EPA | Office of Research a | 513-569-7346 | Kremer.fran@epa.gov | |

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| Leiby, Paul | ORNL | Environmental Science Division, Energy Analysis | 865-574-7720 | leibypn@ornl.gov | - Alternative fuels and vehicle market modeling (studying transitions including supply, infrastructure and end use) - formal systems analysis of Biofuels Energy Security |
| Mamunni, Shani | ORAU | OAK RIDGE NATIONAL | 865-946-1530 | mamunnis@ornl.gov | Biofuels transportation and distribution infrastructure in the United States. Currently working on BioEthanol. |
| Miller, Andy | U.S. EPA | National Risk Management | 919-541-2920 | miller.andy@epa.gov | Understanding environmental implications of biofuels across the supply chain |
| Oladosu, Gbadebo | ORNL | Environmental Scie | 865-576-2485 | oladosuga@ornl.gov | Land-use impacts of biofuels |
| Olszyk, David | U.S. EPA | Research Lab/ORD Western Ecology Divisn | 541-754-4397 | Olszyk.David@epa.gov | Background: Dr. Watrud and Dr. Olszyk have each headed up multi-disciplinary research teams that have studied respectively (a) the ecological effects of gene flow from GM crops and (b) the effects of drift levels of herbicides on native plant communities. They each are based at the USEPA National Health and Environmental Effects Western Ecology Division Laboratory in Corvallis, Oregon. Dr. Watrud has experience in plant ecology, soil microbial molecular ecology and biotech risk assessment; Dr. Olszyk has used plant physiology methods to study global climate effects on forest species and ecotoxicology, agronomic and GIS approaches to study non-target effects of pesticides on plants. |
| Parish, Esther | ORNL | GIST Group | 8655767597 | parishes@ornl.gov | Currently working on an ORNL LDRD that is exploring the potential impacts of planting switchgrass on water quality and the optimal locations for planting switchgrass within a watershed. |
| Patterson, Ike | ORNL | Decision Engineering, | 865 576 5408 | ipe@ornl.gov | Research into the optimization of land use relative to various bioenergy related parameters. |
| Perla, Donna | U.S. EPA | Office of Research and Development | 202-564-0184 | perla.donna@epa.gov | Coordinate 2010 research budget, research needs workshop, and biofuels issues for ORD, including: EPA's Biofuels Coordinating Framework. Assist EPA's representative on the inter-agency Biomass R&D Board. Chair the Board's Biofuel Environment, Health, and Safety Inter-agency working group, identifying practices and technologies associated with each component of the biofuels supply chain, identifying EHS considerations, and developing inventory of federal research associated with biofuel EHS issues. Federal Liaison for the Chesapeake Bay Next Generation Biofuels Initiative. Member of the inter-agency Woody Biomass Utilization Working Group. |

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| Peterson, Steven | ORNL | Geographic Information Sciences and Technology | 865-574-4676 | petersonsk@ornl.gov | Current research involves work on determining the attributes of the biofuels distribution infrastructure from refinery to blending terminal. Research seeks to address a complex system of multiple production locations, distribution facilities, and modal networks and how they are interconnected. |
| Pillai, Rekha | ORNL | Ofc of Institutional | 865-712-5516 | 7sp@ornl.gov | Currently program manager LDRD projects. |
| Powell, Alan | U.S. EPA | | 404-562-9045 | powell.alan@epa.gov | Perspective is mainly policy focused on the need to address sustainability issues in order to have robust alternative fuel options |
| Schweizer, Peter E. | ORNL | Environmental Science Division | 865-241-5622 | pgs@ornl.gov | I currently work as a post doctoral research associate at the ORNL with Yetta I. Jager (principal investigator) on a predictive model for water quality and biodiversity of fishes in agricultural landscapes to examine the sustainability of second-generation biofuel crop cultivation (switchgrass). |
| Smith, Elizabeth (Betsy) | U.S. EPA | Office of Research and Development | 919-541-0620 | smith.betsy@epa.gov | I co-lead a study that is looking at changes in the provision of ecosystem services under the EISA (biofuels are a driver of change) and an alternative Multiple Services Incentive Program in 2022. |
| Smith, Ray | U.S. EPA | Office of Research and Development | 513-569-7161 | smith.raymond@epa.gov | The research effort within the US EPA's National Risk Management Research Laboratory's Sustainable Technology Division is to develop a methodology to design supply chains for biofuel production and use which are as inherently sustainable as possible, to identify areas of the supply chain where changes could improve the sustainability of it, and to prioritize the implementations of those changes to effect the most efficient improvements leading towards sustainability. |
| Storey, John | ORNL | Energy & Transportation | 8659461232 | storeyjm@ornl.gov | I focus on Mobile Souce Air Toxics emissions from advanced engines and fuels |
| Swanson, Kimberly | PQA | Environmental Science Division | 434-296-6094 | kaj_511@earthlink.net | Research has focused on developing biological model to evaluate proinflammatory (acute, non-cancer) effects of diesel compared to biodiesel emissions. Understanding the health effects from biofuels combustion should be part of any discussion of biofuel sustainability. |
| Tran, Liam | University of | | 865-974-6034 | ltran1@utk.edu | regional assessment analysis and modeling of the MidWest, USA, with respect to several development scenarios, including biofuel. |
| Walton, Barb | U.S. EPA | Office of Research and Development | 919-541-7776 | walton.barb@epa.gov | NHEERL's ecological research on biofuels relates to EPA's statutory responsibilities under the Clean Water Act, the Clean Air Act, FIFRA, RCRA, et al. Nurient loading to streams, pesticide runoff, land use changes and their effects on water quality, ecosystem services, and adverse impacts on flora, fauna, and biodiversity are of concern. |

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| Watrud, Lidia | U.S. EPA | Research Lab/ORD Western Ecology Divisn | (541) 754-4874 | Watrud.Lidia@.epa.gov | Background: Dr. Watrud and Dr. Olszyk have each headed up multi-disciplinary research teams that have studied respectively (a) the ecological effects of gene flow from GM crops and (b) the effects of drift levels of herbicides on native plant communities. They each are based at the USEPA National Health and Environmental Effects Western Ecology Division Laboratory in Corvallis, Oregon. Dr. Watrud has experience in plant ecology, soil microbial molecular ecology and biotech risk assessment; Dr. Olszyk has used plant physiology methods to study global climate effects on forest species and ecotoxicology, agronomic and GIS approaches to study non-target effects of pesticides on plants. |
| West, Brian | ORNL | Fuels, Engines, Emissions Research | 865-946-1231 | westbh@ornl.gov | Mid-Level ethanol blends, flex-fuel engine optimization, emissions control R&D |
| West, Tristram | ORNL | Environmental Science Division | 865-574-7322 | westto@ornl.gov | My current research includes estimating changes in carbon fluxes, energy use, and greenhouse gas emissions associated with changes in terrestrial land use, including adoption of carbon sequestration strategies and bioenergy crop management. |
| Wilkerson, Erin | ORNL | Environmental Sciences Division | 865-576-4814 | wilkersoneg@ornl.gov | Bioenergy feedstock logistics - engineering and analysis focused on developing sustainable bioenergy supply chains. |