

Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) July 2017

Publications

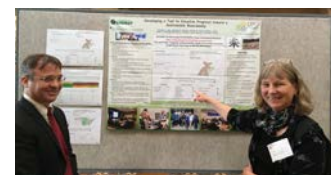
- Duden AS, PA Verweij, HM Junginger, RC Abt, JD Henderson, VH Dale, KL Kline, D Karssenberg, JA Verstegen, APC Faaij, F van der Hilst (2017) Modelling the impacts of wood pellet demand on forest dynamics in southeastern United States. *Biofuels, Bioproducts and Biorefining*.
- Oladosu GA, PN Leiby, DC Bowman, R Uría-Martínez, MM Johnson (submitted) for Special Issue, Impacts of oil price shocks on the U.S. economy: a meta-analysis of oil price elasticity of GDP for net oil-importing economies. *J. Energy Policy*.
- Parish ES, Dale VH, Kline KL Abt RC (in press) Reference scenarios for evaluating wood pellet production in the Southeastern United States. *Wiley Interdisciplinary Reviews*.
- Parish ES, Herzberger AJ, Phifer CC, Dale VH (Submitted for second round of review) Telecoupled transatlantic wood pellet trade provides benefits in both the sending and receiving systems. Submitted to special issue of Ecology and Society on “Telecoupling: A New Frontier for Global Sustainability.”

Presentations

July 11: Paul Leiby and Jonathan Rubin (U. Maine) made a presentation at the 2017 Automated Vehicles Symposium, “Decentralized Incentives to Promote Sustainable Outcomes with CAVs: Taxation Strategies”

July 12: Several ORNL scientists participated in Bioeconomy 2017: Domestic Resources for a Vibrant Future.

- Keith Kline spoke in Plenary Session of the DOE-BETO Annual Conference, “Bio-Economy 2017, Domestic Resources for a Vibrant Future.” The presentation, coauthored by Virginia Dale and other members of IEA Bioenergy Task 43, describes international collaborations for “Catalyzing a Global Advanced Bioeconomy: Biomass Feedstocks for Energy.”
- Virginia Dale, Mike Hilliard, Esther Parish and Keith Kline presented a poster on “Developing a Tool to Visualize Progress toward a Sustainable Bioeconomy.”
- Matt Langholtz and Rebecca Efroymson spoke on the “2016” Billion-Ton report, Volume 2: Environmental Sustainability Effects of Select Scenarios from Volume 1” in a Plenary Session of the DOE-BETO Annual Conference, Bioeconomy 2017, Domestic Resources for a Vibrant Future



July 16-19: Erin Webb, Bhavna Sharma, Devita Amal, and Mahmood Ebadian attended the American Society of Agricultural and Biological Engineers (ASABE) annual meeting in Spokane, WA. Below is a list of their papers and presentations.

- Biofiber Reinforcement in 3D printing as a Coproduct for Biofuel Feedstock Supply Chains {poster}, Erin Webb and Jake Childs
- Modeling Biomass Supply Chain Disruptions in the US {poster}, Devita Amal
- Exploring the Effectiveness of Resource Modules for Multidisciplinary Sustainability Engineering Project Implementation, Bhavna Sharma
- Optimized perimeter cut to improve headland space for maneuvering equipment and reduced turn time, Magen Shedden

- Modeling to improve harvest and collection efficiencies for willow and poplar plantations, Mahmood Ebadian
- Spatial multi-feedstock biomass supply chain modeling framework for the U.S, Bhavna Sharma
- The emerging wood pellet industry as a model for advanced feedstock logistics, Mahmood Ebadian
- Spatial Evaluation of Lost Water Holding Capacity of Watersheds, Bhavna Sharma
- *Biomass Supply Chain Risk: A Systematic Review*, Devita Amal
- *Developing strategies to reduce the risk of fire spread in biomass bale storage yards*, Erin Webb

Other ORNL Activities

Rachel Rozum, A PhD student at Pennsylvania State University, is visiting CBES this month to work with Virginia Dale and Keith Kline on the Antares Landscape Design project. She is focused on quantifying baselines and targets for water and soil indicators of progress toward sustainable agriculture for the Iowa study watersheds.

Brian Davison has been awarded a Fellow of the Society of Industrial Microbiology and Biotechnology.

Co-authors Zia Wadud (U. Leeds) Don MacKenzie (U. Washington) and Paul Leiby (ORNL) were selected as "Short-listed Finalists" for the AutoSens Awards 2017, "Greatest Exploration" category, for their work on automated vehicle technology and energy/emissions reductions, "Help or Hindrance." Winner to be announced Sept. 20 2017 at the AutoWorld Conference in Brussels. Other finalists include Googles Waymo, NVIDIA for camera image processing, the Open AutoDrive Forum, and Univ. of Warwick.

Upcoming ORNL Visits/Events

Aug. 6-11: Several ORNL scientist will participate in the upcoming annual meeting of the Ecological Society of America meeting in Portland.

- Virginia Dale organized a special session on Large Infrequent Disturbances for the Ecological Society of America meeting in Portland. Speakers are Monica Turner, Jerry Franklin, Ariel Lugo, and Ólafur Arnalds.
- Gangsheng Wang will present "Simulated Response of Avian Biodiversity to Biomass Production in the Conterminous United States" with coauthors Henriette Jager, Jasmine Kreig, Nathan Sutton, and Ingrid Busch.
- Keith Kline will present "Estimating land-use change effects associated with supplying a billion-ton U.S. bioeconomy."
- Virginia Dale will present "Status and prospects for renewable energy using wood pellets from the southeastern United States."
- Virginia Dale will help lead a field trip to Mount St. Helens on August 5.

Sept. 12-15: Virginia Dale is invited to give a presentation at the International Association for Landscape Ecology (IALE) 2017 European Congress in Ghent, Belgium, in a symposium on "Integrating renewable and non-renewable energy development with landscape service trade-offs." She will speak on "Assessing Progress toward Sustainability of Bioenergy Systems."

Sept. 18: Virginia Dale is invited by Felix Kienast to speak at the Landscape Ecology Group at the Swiss Federal Institute for Forest, Snow and Landscape Research. She will speak on "Sustainability Considerations for Energy Options."

Sept. 23-27: Yetta Jager is invited to participate in a symposium highlighting authors in an upcoming Renewable Energy and Wildlife book to be published by Johns Hopkins Press in conjunction with The Wildlife Society. The Symposium is sponsored by the Renewable Energy Working Group of The Wildlife Society and will be held at the annual meeting in Albuquerque, NM.

Oct. 18: ORNL will participate in the Fifth Annual National Bioenergy Day (led by Esther Parish).

Nov. 15-17: Latha Baskaran and Virginia Dale had their abstract accepted for presentation at the annual Society of American Foresters National Convention in Albuquerque, NM. The presentation is on

“Framework to Identify Effects of Forest Management for Wood-based Pellets on Biodiversity.”

Dec. 7-6: Virginia Dale and Keith Kline will participate in the first workshop of the US-China Food-Energy-Water Systems Transdisciplinary Environmental Research Network in Nashville, TN.

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