

Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) July 2015

Publications

- Pasi T. Lautala, Michael R. Hilliard, Erin Webb, Ingrid Busch, J. Richard Hess, Mohammad S. Roni, Jorge Hilbert, Robert M. Handler, Roger Bittencourt, Amir Valente, Tuuli Laitinen, 2015. Opportunities and in the Design and Analysis of Biomass Supply Chains. Part of Special Issue on Biofuels in the Americas, *Environmental Management*.
<http://link.springer.com/article/10.1007/s00267-015-0565-2>
- Dale VH, Kline KL, Marland G, Miner RA. 2015. Ecological objectives can be achieved with wood-derived bioenergy. *Frontiers in Ecology and the Environment* 13(6):297-299.

ORNL Presentations

July 5-11: Virginia Dale and Keith Kline attended the 9th International Association of Landscape Ecology (IALE) World Congress in Portland, Oregon. Dr. Dale presented an invited talk on “Ecological implications of energy use: a focus on scale” in the John A. Wiens Symposium on Spatial Scaling in Ecology. She also told her personal story in a public evening session as part of Springer Storytellers and Story Colliders:
<http://www.beforetheabstract.com/events/springer-storytellers-iale-portland/>



Dale, Wiens, Kline & Dale

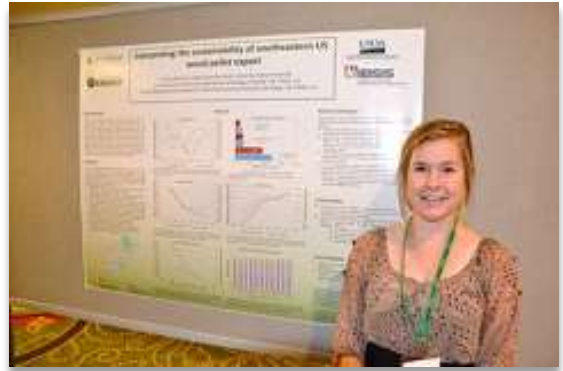


Virginia Dale's presentation



July 15: A poster titled Incorporating Bioenergy into Sustainable Landscape Designs Informs Opportunities, Barriers, and Paths Forward was presented by Emma Tobin at the Committee For Women Celebration of Women in Science and Engineering Poster Session. Authors of the poster are: Virginia H Dale, Keith L Kline, Timothy A. Volk, C. Tattersall Smith, and Inge Stupak. Esther Parish also presented a poster at this conference titled “Assessing Multimetric Aspects of Sustainability: Application to a Bioenergy Crop Production System in East Tennessee.”

July 27-30 – University of Tennessee student, Emma Tobin, won first prize in the undergraduate student poster competition held at the American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting in New Orleans for her poster entitled, “Interpreting the Sustainability of Southeastern U.S. Wood Pellet Export” (coauthors Virginia Dale, Keith Kline and Esther Parish from ORNL). Emma completed a summer internship at ORNL under a Southeast Energy Development (SEED) fellowship of the Southeastern Partnership for Integrated Bioenergy Supply Systems (IBSS) supported by USDA.



Other students this summer who also submitted posters at the ASABE Annual Meeting are:

Kirk Copley, Auburn University. Poster Title: *Standardization of Agriculture Production Budget Models Using Python*

Brady Gail, University of Kentucky. Poster titled: *Cost Assessment of Corn Stover Harvest during the BALES Project*

Eric Vogt, Auburn University. Poster titled: *Comparing Performance of a Field Chopping vs. Bale Harvest System for Switchgrass*

Johnson Luma, University of Tennessee Post Title: *Minimizing Fire Spread in Outdoor Biomass Storage Facilities: Introduction to Developing Best Management Practices*

Oluwafemi Oyedeji, Erin Webb, and Shahab Sokhansanj: Poster entitled: *Simulating Field Drying of Corn Stover across the US.*



July 30: Jasmine Kreig presented a poster entitled "The Effects of Management Practices on Water Quality in a Bioenergy Landscape" at the Oak Ridge Postdoctoral Association's 3rd Annual Research Symposium. Her presentation covered the research she has been doing with Yetta Jager and Latha Baskaran in support of the Sustainability section of the Billion Ton 2016 report. The symposium offered an opportunity for post-bachelors, post-masters, and post-docs to present their work. She also presented her poster at the 3rd Annual ORAU Post-Grad and Faculty Poster Session on August 3rd.

Other CBES Activities

July 10 – Visit by Keith Kline, Esther Parish, and others to Tennessee Technical University in Cookeville to discuss research opportunities.

July 13 – Keith Kline and Virginia Dale joined the BETO International call.

Nate Pollesch is lead on a proposal to DIMACS (Center for Discrete Mathematics and Theoretical Computer Science) at Rutgers University entitled "From the Theoretical to the Actionable: A Proposal for Follow-up to Mathematics for Planet Earth Workshop Series" that is under consideration at DIMACS.

Upcoming ORNL Visits/Events:

August 4 – Emma Tobin will attend a meeting at North Carolina State University of the Southern Forest Resource Assessment Consortium (SOFAC) research cooperative. SOFAC is designed to develop forest sector market models for application to forest resource assessments in the South, U.S., and the World.

August 8-14: Virginia Dale plans to attend the 2015 Ecological Society of America (ESA) Annual Meeting and give an invited talk in a special session on "The role of long-term studies in advancing ecological understanding." Keith Kline will also present on "A landscape design approach for assessing trade-offs and sustainability of woody biomass production from forests in the Southeastern United States." This meeting is taking place in Baltimore, Maryland.

August 12-13—Esther Parish will present "ORNL's Approach to Sustainability Evaluation of Bioenergy Production Systems & Landscape Design" at the Annual Meeting of the Southeastern Partnership for Integrated Biomass Supply Systems (IBSS) to be held at Auburn University in Alabama. The IBSS regional partnership is sponsored by USDA and led by the University of Tennessee's Institute of Agriculture's Center for Renewable Carbon.

September 29-October 2: Rebecca Efrogmson plans to attend the 2015 Algae Biomass Summit in Washington, DC, and to present "Environmental and socioeconomic indicators for sustainable production of algal biofuels."

Sept 30-Oct 2: Esther Parish will present our multi-metric sustainability case study assessment of the Vonore switchgrass-to-ethanol experiment at the Switchgrass III: Prairie and Native Grass International Conference in Knoxville.

October 21: ORNL will celebrate the 3rd National Bioenergy Day in a joint event with the University of Tennessee's Institute of Agriculture's Center for Renewable Carbon.

October 26-29: Virginia Dale and Keith Kline are invited to participate in the International Energy Agency (IEA) Bioenergy Conference 2015 in Berlin, Germany. Virginia will give a presentation titled "Integrating biomass supply systems into sustainable landscape designs" with coauthors Keith Kline and Esther Parish. Keith will give a poster on "Understanding Indirect Effects: Evaluating and Improving Science-based Practices for ILUC assessment" with coauthors Hans Langeveld, Virginia Dale and Rebecca Efrogmson.

November 2-6: Keith Kline and Maggie Davis plan to attend the Society of American Foresters annual convention and present on, “Bioenergy Trade and Sustainability Assessment: Science, Truth and Consequences” and “Indirect Effects of Bioenergy: International Standards and Science” in a special session on “Sustainability of International Trade in Bioenergy.” Virginia Dale will also attend and will give a presentation on “Using landscape design to assess sustainability of wood biomass production from southeast US forests.”

December 14-18: H. Jager and SWAT-modeling team are invited to the 2015 AGU fall meeting to present at a Symposium on ‘Biofuel-induced land use / land cover change and associated biogeochemical and biophysical impacts.’”