

Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) January 2014

Publications and Reports:

Submitted: Kang, S., D. Wang, J.A. Nichols, J. Schuchart, K.L. Kline, Y. Wei, D.M. Ricciuto, S.D. Wullschlegler, W.M. Post, R.C. Izaurralde (in review at Journal Computational Science). “mpi_EPIC Model Development and Application to Global Agroecosystem Modeling”

Jager HI, Baskaran LM, Schweizer PE, Turhollow AF, Brandt CC, Srinivasan R. In press (2014). Forecasting changes in water quality in rivers associated with growing biofuels in the Arkansas-White-Red river drainage, USA. GCB Bioenergy DOI: 10.1111/gcbb.12169

Klaus, J., J.J. McDonnell, C.R. Jackson, E. Du, and N.A. Griffiths. Where does streamwater come from in low relief forested watersheds? A dual isotope approach. Submitted to: Hydrology and Earth System Sciences.

ORNL Presentations:

Forum of the Center for Bioenergy Sustainability (CBES)

Jan 16 – Derek Splitter spoke on ““Methods of reducing transportation energy and petroleum consumption and environmental impacts.” He discussed internal combustion engines fundamentals, efficiency source, and fuel-related powertrain opportunities. This presentation can be accessed at the CBES website under forums: <http://www.ornl.gov/sci/ees/cbes/forums.shtml>

Other ORNL Activities:

Esther Parish was accepted into the Bredesen Center’s PhD program in Energy Science and Engineering (ESE) with a specialization in “Environmental & Climate Sciences.” The Bredesen Center for Interdisciplinary Research and Graduate Education unites extensive and complementary resources at the University of Tennessee, Knoxville (UTK) and Oak Ridge National Laboratory (ORNL) to advance science, technology, engineering, and mathematics research related to energy (<http://bredesencenter.utk.edu/index.php>).

Jan 7-31 – Davis and Kline participated in 12 webinars for ISO 13065, Sustainability Criteria for Bioenergy. They also briefed a new US delegation member, Fahren Robb (USDA Foreign Agricultural Service), on US comments and strategy in preparation for a February meeting in Berlin.

Jan 15-17 - Natalie Griffiths traveled to the Savannah River Site to meet with collaborators from the USFS-SR and UGA to discuss project updates and field sampling.

Jan 16-17 – Virginia Dale participated in the Biomass Market Access Standards Group (BMAS) workshop in Chicago.

Upcoming ORNL Visits/Events:

Feb 5-7 – Keith Kline invited to present and participate in the Vital Signs workshop in Oxford, UK (invitees travel is funded by Conservation International). Workshop will assess models and approaches for development more sustainable land management and communicating trade-offs.

Feb 10-11 – Yetta Jager and Gangsheng Wang will attend a meeting of the South Fork Watershed Alliance and present research plans at a USDA-sponsored workshop to kick-off our multi-lab collaborative Pathways project in Ames, IA.

Feb 10 – During a technology session on Bioenergy Resources and Sustainability at the Agricultural Equipment Technology Conference, Feb 10-12 in Louisville KY, Esther Parish will present “Sustainability Metrics” and Maggie Davis will deliver a talk on “International Standards on Sustainability.”

Feb 12 – Matt Langholtz, and Virginia Dale are invited to a meeting of the South Fork Watershed Alliance at a USDA-sponsored workshop in Ames, IA.

Feb 18 – Esther Parish and Zachariah Seiden will present recent research at the University of Tennessee’s 3rd Annual Watershed Symposium. Esther will present, “Designing Bioenergy Cropping Systems to Optimize Sustainability Objectives,” and Zachariah will present “A Water Quality Model Comparison of Potential Impacts from Bioenergy Crop Land Conversations: Switchgrass versus Hardwood.”

Feb 19-21 – Virginia Dale will attend the Industrial Pellet Trade & Transport Summit in Atlanta.

March 3-7 – Arnaldo Walter, a sustainability expert and professor from Unicamp in Campinas Brazil, will be hosted at ORNL by Kline and Davis to collaborate on common indicators for sustainable biofuel initiatives. Dr. Walter will also participate in the DOE Landscape Design Workshop (New Bern, NC).

February 17-21 – Maggie Davis will participate in meetings in Berlin Germany for developing the next iteration of the draft standard for ISO 13065, Sustainability Criteria for Bioenergy.

May - Zachariah Seiden will speak on using SWAT to compare pine and switchgrass at the EWRI 2014 conference .

June 4-7 – Virginia Dale has been invited to be a guest speaker at the 4th Pan-American Congress on Plants and Bioenergy in Canada.

Oct 5-11 – Virginia Dale will participate at the International Union of Forest Research Organization meeting in Salt Lake City, Utah.