

**Bioenergy, Sustainability, and Land-Use Change Report
Oak Ridge National Laboratory (ORNL) August 2013**

ORNL Center for BioEnergy Sustainability (CBES) Forums:

Aug 15: Helio Joris , visiting researcher from the Agronomic Institute, Campinas, presented “Introduction and Main Objectives in Short Term Research of Helio Joris at ORNL.” This presentation can be accessed at the CBES website under forums: <http://www.ornl.gov/sci/ees/cbes/forums.shtml>

Other ORNL Activities:

Keith Kline and Maggie Davis participated in 6 conference calls with the US Technical Advisory Group (TAG) and Mirror Committee to ISO PC 248 to discuss comments on the second committee draft (CD) of 13065. US comments and voting on CD2 must be unified and submitted by 11 of September. Additionally, Kline and Davis had several additional exchanges with US TAG lead on a strategy for upcoming plenary meetings regarding the US recommendations for improving 13065.

August 2 –Davis and Kline organized a conference call with researchers at the Brazilian Bioethanol Science and Technology Laboratory (CTBE) to implement research plans under the FAPESP-ORNL award to develop common indicators of bioenergy production. While in Sweden in October, ORNL and CTBE plan to meet to finalize arrangements for an exchange of researchers beginning in November.

August 11 –Davis compiled and submitted an annotated bibliography to update ISO Project Committee 248, Sustainability Criteria for Bioenergy, on the state of the science of indirect effects. This included citations and annotations based on submissions by Working Group 4 experts between the dates of December 1, 2012, and July 31, 2013. This updates prior reviews of scientific research on topics such as the importance of defining system boundaries and reference cases. This will form the basis of a report that will be delivered by Davis and WG4 at an upcoming ISO plenary (Oct. in Stockholm, Sweden).

August 12 - Helio Joris, a PhD student from the Institute of Agronomy of Campinas, Sao Paulo Brazil, began as a visiting researcher at ORNL (hosted by Melanie Mayes, Keith Kline, Maggie Davis and Shuijiang Kang). Helio, who will be at ORNL for six months (August to January), will collaborate with Mayes on techniques for assessing biological N fixation, and with other staff on studies related to nutrient requirements for bioenergy crops, global crop modeling, and sustainability indicators.

August 13-15 – Martin Schweitzer attended the International Energy Program Evaluation Conference in Chicago, IL.

August 19 – Davis and Kline submitted comments on the second committee draft (CD) of 13065. Comments submitted by September 11, will be discussed at the Plenary in October and addressed in subsequent months during working group meetings.

Aug 21 - Matt Langholtz and Laurence Eaton hosted a webinar with North Carolina State University Forestry Extension on the topic of Projections of Agricultural Land Use for Bioenergy Production. The webinar will be hosted at <http://www.forestrywebinars.net/>. The audience consisted of natural resource professionals, private landowners, and the general public.

Aug 23- Nagendra Singh and Esther Parish met with Bill Hargrove and Steve Norman of the USDA Forest Service to discuss their analysis of most-different national phonological regions for the coterminous

United States from 2000-2011 (as derived from 8-day MODIS satellite data). Although the cluster analysis of vegetation types can be complicated by weather events, this consistently derived and continuous dataset is available for the entire period of biofuels ramp up and may prove useful in ORNL's land use change analyses.

August 26th - Dana Abulebdeh (senior from the University of North Carolina at Charlotte) began research under the HERE program and will contribute to the Brazil collaborations project with Keith Kline and Maggie Davis. Primarily, she will be working on a literature review of environmental sustainability indicators (e.g., SOC) and methodology used in Brazil and the US to contribute to a determination of common indicators of sustainability and associated measurement protocols.

Upcoming ORNL Visits/Events:

Sept 17-18 – Virginia Dale has been invited to present “Opportunities to design biofuel systems for multiple environmental services” at the symposium on “Sustainable Biofuels in the Nearer Term” at the University of Minnesota.

Sept 30-Oct 4 – Keith Kline and Maggie Davis will attend the International Organization for Standardization (ISO) PC 248 Plenary to review second committee draft of ISO 13065, Sustainability Criteria for Bioenergy.

Sept 30-Oct 3 - Rebecca Efrogmson will present a poster on sustainability indicators for algal biofuels at the Algae Biomass Summit in Orlando, FL.

Oct 15-17 – Debo Oladosu and Keith Kline are invited to present at the CRC Workshop on Life-Cycle Analysis of Transportation Fuels at Argonne National Lab.

Oct 24-25 – Virginia Dale has been invited to present at the Transatlantic Trade in Wood for Energy: A Dialogue on Sustainability Standards and Greenhouse Gas Emissions Workshop in Savannah Georgia hosted by the Pinchot Institute for Conservation.

Oct 31-Nov 2 – Keith Kline has been invited to speak at the Agricultural Law Association's annual meeting in Madison, WI. The panel is titled “Certifying Bioenergy Products for Market Access: Developments in Sustainable Law and Policy.”

November 10-14 – Kline, Dale and Davis have been invited to participate in the Global Sustainable Bioenergy (GSB) and Latin America Caribbean and Africa (LACAf) projects joint-meeting in Atibaia, Brazil.

Nov 18 - Virginia Dale will present "Risks and Opportunities Related to Energy Use and Development in Tennessee" at the North American meeting of the Society of Environmental Toxicology and Chemistry (SETAC) in a session on "Ecological Risk and Impacts Relevant to Tennessee and the Region."

December – Virginia Dale has been invited to co-chair the China-US Workshop on “Land Use Change: Turning challenges into Opportunities for Agricultural Sustainability” hosted by the Shenyang Agricultural University, Shenyang, China.