

Maggie R. Davis

R&D Associate Staff Member

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Primary Research Interests: forest and agricultural economics and the establishment of a global bioeconomy.

Objective: to promote widespread adoption of clean, renewable energy; enhance growth in domestic clean-energy industries and promote trade in sustainable bioenergy and bio-products.

Projects: a) addressing global barriers to growth of the US bio-economy; b) biorefinery codes and standards, to develop an ASTM standard for assessing relative sustainability involving energy or industrial chemicals from biomass; and c) supply forecasts (POLYSYS model) and analyses of energy crop production strategies (Billion Ton Report, 2016).

Education and Training

2011 University of Tennessee, Forestry Wildlife and Fisheries Sciences, M.S.

2007 University of Tennessee, Economics and Geography, B.A.

Publications

1. Dale V.H., Efroymson R.A., Kline K.L., Langholtz M.H., Leiby P.N., Oladosu G.A., Davis M.R., Downing M.E., Hilliard M.R. (2013). Indicators for assessing socioeconomic sustainability of bioenergy systems: A short list of practical measures. *Ecological Indicators* 26: 87-102. <http://dx.doi.org/10.1016/j.ecolind.2012.10.014>
2. Oladosu G, Kline K, Leiby P, Uria-Martinez R, Davis M, Downing M and Eaton L. 2012. Global economic effects of US biofuel policy and the potential contribution from advanced biofuels. *Future Science – Biofuels* 3(6):703-723.
3. J. Peine, B. Jacobs, K. Franzreb, M. Stevens, 2011. Ecosystem Management - The Law and Politics of Sustainability, Berkshire Encyclopedia of Sustainability.

Papers in progress:

4. Soil organic carbon measurement protocols: A US and Brazil comparison and recommendation
5. Brazil's strategic role in the future of Biofuels: a joint assessment
6. Indirect Effects – state of science and suitability within international standards

Research and Professional Experience

2011-2014 Post-masters Research Associate, Environmental Sciences Division, Oak Ridge National Laboratory

Projects: (1) Brazil Collaborations on Sustainable Production Pathways and Land-Use Change Analysis project, (2) International Standards and Global Issues affecting Sustainability of Biofuels: i) Official Secretary for the ISO TC 248 (“sustainability criteria for bioenergy”) Working Group 4 (“Indirect Effects”), ii) Contributing Expert to ISO TC 248 Working Group 3 (“Environmental, Economic, and Social Aspects”)

Synergistic Activities:

- 1) Secretariat to Working Group 4 (“Indirect Effects”) for the International Organization for Standardization (ISO) Project Committee 248 – Sustainability Criteria for Bioenergy
- 2) Served as an official US delegate to the international plenary meetings for ISO TC 248: Argonne National Laboratory (4/2012), The University of the Sunshine Coast, Queensland Australia (1/2013), Stockholm Sweden (9/2013), German Standards Institute, Berlin (2/2014)
- 3) Contributing expert to establish Environmental, Economic, and Social Indicators of bioenergy sustainability for ISO TC 248 (2012 – 2015): approximately 300 hours of written and oral contributions through working meetings on-site and remotely
- 4) Formal presentations to international and professional conferences in Argentina and Brazil: BBEST 2014, RCN 2014, PIRE 2013 and 2014, IRAM 2012
- 5) Professional Exchanges in Argentina & Brazil with members of FAPESP, ICONE, CTBE, USP, IRAM, the Canadian Bioenergy Corporation, and others involved in developing a global bioeconomy

Language

Portuguese: 1+ year of private training, 1 year of immersion, work experience; Working knowledge of Spanish

Previous experience and recognition:

2010 Year-long study in Viçosa, Minas Gerais, Brazil: Researcher at Iracambi Atlantic Rainforest Research Center
Projects: Economic Study – Integrating Eucalyptus & Forest-Corridors, Land-Use Change
Synergistic Activities: graduate study at The Federal University of Viçosa, Forestry Department

2006-2010 Research Specialist II - The University of Tennessee's Institute for a Secure & Sustainable Environment
Projects: (1) ETN Teacher Excellence program- a NSF Math-Science Partnership program focused on STEM education, (2) Conservation Consciousness- an ALCOA funded project with monthly lectures focused on alternative energy, (3) Online Energy-Education Course- TVA funded online course developed to educate the public on alternative energy sources as part of their "green-power switch"

2007-2008 Short-term work in Geographic Information Science: (1) Post-bachelors researcher: GIST department, Oak Ridge National laboratory, (2) analyst & researcher: USGS Southern Appalachian Field Lab–Appalachian Man & Biosphere Program

Awards: 1) 2010 - Rotary Ambassadorial Research Scholarship (\$24,000); 2) Undergraduate Student Publication Award, Department of Geography, The University of Tennessee

Recent accomplishments:

1. International Standard: Approved ISO 13065, Sustainability Criteria for Bioenergy
2. Draft international standard: ASTM draft standard, draft version 1 for a Practice Guide for science-based sustainability assessment methods
3. Report: "Brief Perspectives on Expanding Advanced Energy Sources in Brazil: Part 1: Biofuels and Bioenergy" led by Brian Davison and submitted in January 2015 as requested by the office of intelligence and counterintelligence.
4. Peer review ranking of "Global barrier" project: one of the highest rankings of all Analysis and Sustainability projects in the USDOE BETO portfolio
5. Presentation at professional conferences: "Brazil's strategic role in the future of biofuels: a joint assessment." delivered in Brazil (BBEST October, 2014); Invited presentation: "Indirect effects of bioenergy: international standards and science", delivered during the National Bioenergy Day webinar with CRC (October, 2015) and at the Society of American Foresters national convention (November 2015)