

Keith L. Kline

Distinguished Research Staff, Environmental Sciences Division, Oak Ridge National Laboratory;

Phone: 865-574-4230, Email: klinekl@ornl.gov

Joint Faculty, Bredesen Center for Interdisciplinary Research & Graduate Education, University of Tennessee, Knoxville, TN kkline@utk.edu or kkline@yahoo.com

Website: <https://www.ornl.gov/staff-profile/keith-l-kline>

Degrees:

- M.Ed., International Education Program, Framingham State College, Massachusetts, 2000
- B.S., Energy & Environment, School of Nat. Resources, University of Michigan, Ann Arbor, 1979

Overview: Beginning in 1980, Ecuador, Keith worked for 28 years with USAID and partners in Latin America and Africa to improve livelihoods while conserving forests and biodiversity. Projects supported clean, renewable energy, more resilient agricultural systems, community-based concessions, conservation planning, land tenure and conflict resolution. Since 1990, Keith has been affiliated with the Oak Ridge National Laboratory where current research includes assessing effects of energy production systems, standards and certification. Keith also holds an Assistant Professorship at the University of Tennessee. Over the past decade, he co/authored 90+ publications (1800 citations) and made over 60 invited presentations at international events, related to renewable energy and improving the sustainability of natural resource management.

Select publications:

- Kline KL, Dale VH. 2008. Biofuels, causes of land-use change, and the role of fire in greenhouse gas emissions. *Science* 321:199 <http://www.sciencemag.org/cgi/reprint/321/5886/199.pdf>
- Kline KL, Dale VH, Lee R, Leiby P. 2009. [In Defense of Biofuels, Done Right](#). *Issues in Science and Technology* 25(3): 75-84.
- Kline KL, Coleman MD. 2010. Woody energy crops in the southeastern United States: Two centuries of practitioner experience. *Biomass and Bioenergy* 34(12): 1655-1666.
- Kline KL, Dale VH, Grainger A. 2010. Challenges for Bioenergy Emission Accounting. *Science* e-letter (2 March 2010) <http://www.sciencemag.org/cgi/eletters/326/5952/527#13024>
- Kline KL, Parish E, Singh N, et al. 2011. Collaborators welcome: Global Sustainable Bioenergy Project. *GLP NEWS* No. 7 (7-8). <http://www.globallandproject.org/newsletter.shtml>
- Dale VH, KL Kline. 2013. Issues in using landscape indicators to assess land changes. *Ecological Indicators* 28:91-99
- Kline KL, Singh N, Dale VH. 2013. Cultivated hay and fallow/idle cropland confound analysis of grassland conversion in the Western Corn Belt. *Proceedings Nat'l Academy of Sciences* 110(31)
- Dale VH, Kline KL, Kaffka SR, Langeveld JWA. 2013. A landscape perspective on sustainability of agricultural systems. *Landscape Ecology* 28:1111-1123.
- Kline KL, Mayer AL, Martinelli FS, et al. 2015. Bioenergy and biodiversity: Key lessons from the Pan America Region. *Environmental Management* 56:1377-1396.
- Kline KL, Msangi S, Dale VH, et al. 2016. [Reconciling food security and bioenergy](#): priorities for action. *Global Change Biology Bioenergy* 9(3):557-576.
- Kline KL, Davis M, Dunn J, Eaton L, Efrogmson RA. 2017. [Ch. 3 "Land Allocation and Management: Understanding Land-Use Change \(LUC\)](#) Implications under BT16 Scenarios" in US DOE Billion-Ton Report: Advancing Domestic Resources for a Thriving Bioeconomy, Volume 2: Environmental Effects of Select Scenarios (Efrogmson, Langholtz, Johnson, Stokes, Eds.) Oak Ridge National Laboratory, Oak Ridge, TN. 642p. doi 10.2172/1338837

- Eichler Inwood SE, Lopez-Ridaura S, Kline KL, Gerard B, Gardezabal Monsalve A, Govaerts B, Dale VH. 2018. Assessing sustainability in agricultural landscapes: a review of approaches. *Environmental Review* 26: 299–315. DOI: 10.1139/er-2017-0058
- Kanter DR, Musumba M, Wood SLR, Palm C...Kline KL, et al. 2018. Evaluating agricultural trade-offs in the age of sustainable development. *Agricult. Systems* 163:73-88.
- Kline KL, Parish ES and Dale VH. 2018. The importance of reference conditions in assessing effects of bioenergy wood pellets produced in the southeastern United States. *World Biomass* 2018-2019; p 82-86. DCM Productions, United Kingdom. <http://www.dcm-productions.co.uk>

Professional Experience

- 2017-present, Distinguished Research Staff, Oak Ridge National Laboratory (ORNL), Environmental Science Division. Note: 1990-2017, ORNL Senior Researcher serving on intermittent assignments with US Agency for International Development (USAID)
- 2007-2009, Advisor to USAID Southern Africa Environmental Programs (under inter-agency agreement) and Research Staff, Environmental Sciences Division, ORNL
- 2004-06, Regional Natural Resources Program Leader and Project Officer; U.S. Agency for International Development (USAID), Regional Center for Southern Africa, Gaborone, Botswana
- 2001-04, Research Staff (Federal Energy Management Program, combined heat-power systems, alternative financing for energy efficiency and renewables) Engineering Science and Technology Division, ORNL
- 1990-2000, Team Leader, USAID Environmental Strategic Objective, Guatemala (on loan as full-time staff from ORNL Energy Division via inter-agency agreement with USAID)
- 1984-1990, Project Manager, USAID Energy & Environmental Programs: Regional Office for Central American Programs (ROCAP); Maya Biosphere Project (Guatemala), Central American Research Institute for Industry & Technology (renewables, energy efficiency), Disaster Recovery & Reconstruction (Peru)
- 1980-1984: Appropriate Technology Advisor for Rural Development; US Peace Corps & USAID, Ecuador
- 1972-1978: Assisted with operations of 900-acre Maple Shade Farm, Southwest Michigan.

Selected Synergistic Activities

- 2009-present, Center for Bio-Energy Sustainability at ORNL and collaborator with the International Energy Agency Bioenergy Inter-task and Sustainable Supply Task
- Contributing member of the American Society for Testing and Materials (ASTM) International/ANSI, Committee E48 on Bioenergy and Industrial Chemicals from Biomass
- Technical advisor for International Organization for Standardization (ISO). Led editing committee for ISO 13065, Sustainability Criteria for Bioenergy (2010-2015)
- Advisor/Chair for international events including: Coordinating Research Council on Life-Cycle Assessment 2019; AIChE Institute for Sustainability 2019 Conference; Institute for Food Policy Research workshop on food security and bioenergy
- Served by invitation as Expert for Work Group on Land-Use Change, California Air Resource Board (CARB) Low-Carbon Fuel Standard; Sacramento, California (2009-11)
- Reviewer for scientific journals i.e.: Proceedings National Academy of Sciences (PNAS–USA); *Frontiers in Ecology and the Environment*; *GCB-Bioenergy*; *Energy*; *Sustainability and Society*; *Environmental Modeling and Software*; *Enviro Impact Assmt Review*; etc.