

## KEITH L. KLINE

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### EDUCATION:

- School of Natural Resources, University of Michigan, B.S., 1979.
- International Education Program, Framingham State College, Massachusetts, M. Ed., 2000.

### PROFESSIONAL ACTIVITIES:

- **Senior Research Staff** for the Oak Ridge National Laboratory (ORNL) Environmental Sciences Division (ESD), Center for Bioenergy Sustainability and Energy & Environmental Systems Science (2006–Present). Lead research on domestic and international land-use change dynamics, potential for sustainable biofuel feedstock production in U.S. and abroad, and current and future projections of effects of different production scenarios based on empirical data analysis and models. Research includes consideration of commercial forestry to supply a biofuel industry in the Southeast U.S and environmental program monitoring, evaluation and results-based reporting.
- **Team Leader** for U.S. Agency for International Development (USAID), Southern Africa Regional Environmental Program (2004–2006). Led successful integrated river basin management initiative to balance water needs with goals to protect biodiversity and foment sustainable development. Provided technical assistance to USAID Missions in Africa on environmental performance indicators.
- **Cooling, Heating, and Power (CHP) Coordinator** for ORNL Federal Energy Management Program (FEMP) Team, Engineering Science and Technology Division (2000-2004). Coordinated the accelerated development and deployment of clean, distributed combined heat and power as a national initiative for federal facilities. Guided activities to reduce costs through innovative financing, property management, public-private partnerships and appropriate technologies.
- **Team Leader** USAID Environmental Strategic Objective, Guatemala (1990–2000). Led evaluation and design teams that integrated new approaches for civil society participation in policy issues including those related to protected areas, forestry, community participation and land-use planning. Coordinated a diverse team for a complex program that involved over \$60 million in US funding and twelve partner organizations. Annual program performance reviews resulted in highest possible rating, “exceeding expectations.” Provided direction for monitoring and reporting, the development of customer service plans, results-based indicators, external evaluations and audits. Managed multi-million-dollar agreements with contractors and non-profit partners (TNC, CI, CARE, Peregrine Fund, Rodale and others). Supervised scoping and implementation of Environmental Assessments involving forestry, sustainable agriculture, tourism, land titling and park management.
- **Independent Contractor** supporting USAID in Central America and Peru (1984–1990). **Regional Environmental and Natural Resource Management (RENARM)**: Mobilized and directed the start-up of a seven-country, \$60 million project that Ambassador Jack Hood Vaughn called, “the most ambitious and complex natural resource management effort attempted in Central America” and leveraged over \$5 million in private matching grants (1989-90). **Central American Research Institute for Industry and Technology**: Served

as Advisor to the Director and technical expert for clean energy; evaluated two regional projects promoting renewable energy technologies and energy conservation in industry; edited over 20 Spanish technical publications on renewable energy resources and conservation (1986-89). **Disaster Rehabilitation and Reconstruction Project**, USAID, Lima, Peru: Managed and monitored national reconstruction activities involving a staff of 33 for this \$60 million project to rebuild the country after the 1983 El Nino disaster. Developed standards for project selection, monitoring and performance reports (1984-86).

- **Peace Corps**, Ecuador (1980-1984). Planned and completed 60 small projects involving renewable energy, sustainable agriculture, water and sanitation. Assessed feasibility to identify most appropriate solutions including wind power, methane gas digesters, solar water heating and fuel-efficient cook stoves; conducted technology transfer events for trainers and applied non-formal education concepts.
- **Maple Shade Farms**, Mendon, Michigan (1972-1980, part-time). Assisted with the operations and management of 1200 acre family farm including corn, soy beans, wheat, specialty crops and forest.

#### **PUBLICATIONS (recent examples):**

- Kline, K. L., V. H. Dale, and A. Grainger. 2010. Challenges for Bioenergy Emission Accounting. Science e-letter (2 March 2010) <http://www.sciencemag.org/cgi/eletters/326/5952/527>
- Dale VH, Kline KL, Wiens J, Fargione J. January 2010. Biofuels: Implications for Land Use and Biodiversity. Ecological Society of America special report: <http://www.esa.org/biofuelsreports>
- Kline, K. and Coleman, M.D., 2010. Woody energy crops in the southeastern United States: Two centuries of practitioner experience, Biomass and Bioenergy, 34(12)1655-1666, ISSN 0961-9534, DOI: 10.1016/j.biombioe.2010.05.005. <http://dx.doi.org/10.1016/j.biombioe.2010.05.005>
- Oladosu, GA, and Kline KL. 2010. The Role of Modeling Assumptions and policy Instruments in Evaluating the Global Implications of U.S. Biofuel Policies. Proceedings of the International Association of Energy Economics International conference (July 2010).
- Dale, VH, R Efroymsen, and K Kline. 2010. Using a Broad-scale Perspective to Address Changes in Land, Climate, and Energy: China-US Joint Research for Ecosystem and Environmental Change, pages 52-55, published by the Institute for a Secure and Sustainable Environment, University of Tennessee.
- Kline KL, Dale VH, Lee R, Leiby P. 2009. In Defense of Biofuels, Done Right. Issues in Science and Technology 25(3): 75-84. <http://www.issues.org/25.3/kline.html>
- Kline KL, Dale VH, Efroymsen RA, Haq Z, Goss-Eng A. 2009. Land-Use Change and Bioenergy: ORNL/CBES-001, U.S. Department of Energy and ORNL. <http://www.ornl.gov/sci/besd/cbes.shtml>
- Hecht, AD, Shaw D, Bruins R, Dale VH, Kline KL, Chen A. 2009. Good Policy Follows Good Science - Using Criteria and Indicators for Assessing Sustainable Biofuel Production. Ecotoxicology [18(1):1-4].
- Kline, KL and 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>
- Dale VH, Kline KL, Mulholland P, Downing M, Graham R, and Wright L. 2009. "Selecting Metrics for Sustainable Bioenergy Feedstocks." In Proceedings of the 2008 China-US Joint Research for Ecosystem and Environmental Change, University of Tennessee, 2009.
- Kline KL, Oladosu GA, et al. 2008. Biofuel Feedstock Assessment for Selected Countries. ORNL/TM-2007/224. [http://apps.ornl.gov/~pts/prod/pubs/ldoc10201\\_ornl\\_feedstock\\_potential\\_final\\_feb18.pdf](http://apps.ornl.gov/~pts/prod/pubs/ldoc10201_ornl_feedstock_potential_final_feb18.pdf)

**SYNERGISTIC ACTIVITIES:**

- Served by invitation on expert advisory panels including:
  - The Expert Work Group on Land-Use Change for the California Air Resource Board (CARB) Low-Carbon Fuel Standard;
  - The Council for Sustainable Biofuel Production (CSBP) Task Force on GHG emission approaches for advanced cellulosic biofuel feedstocks (voluntary domestic sustainability standards);
  - The US advisory group for International Standards Organization (ISO) Project Committee #248 for Bioenergy Sustainability Criteria (work groups on GHG emissions and indirect effects).
- Contribute with analysis and planning advice to the Global Sustainable Bioenergy Project (GSB) to develop a comprehensive analysis of global sustainable feedstock potential
- Member of the American Society for Testing and Materials (ASTM) International; and the U.S. Regional Association of the International Association of Landscape Ecology (US-IALE).