

# Qualifications Brief

**Sarah Lynn Cunningham, PE**  
**Environmental Consultant**

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## Summary Profile

Via my interdisciplinary education, experience and talents, I offer the technical problem-solving abilities of an engineer, the communication skills of an educator, the creativity of an artist and the passion of an advocate. See [www.greensmarts.us](http://www.greensmarts.us)

## Technical Research and Writing

I have diverse experience with translating technical and public policy matters into audience-appropriate terms and concepts, such as how-to guides, engineering analyses, project reports, successful grant applications, brochures and periodicals, including the following examples:

Cunningham, S. L., “From Smoke-Filled Skies to Smoke-Filled Rooms: Louisville’s Political Battles Over the ‘Smoke Evil,’” *Ohio Valley History*, Spring 2008.

Cunningham, S. L., PE, *Do You Want Utilities With That? Avoiding the Unintended Economic Consequences of Poorly Planned Growth on the Provision of Water and Sewer Service*, Center for Environmental Policy & Management, University of Louisville, Practice Guide #14, Summer 2006. Accessible via [http://cepm.louisville.edu/Pubs\\_WPapers/practiceguides/PG14.pdf](http://cepm.louisville.edu/Pubs_WPapers/practiceguides/PG14.pdf)

Cunningham, S. L., “Dispatches from the field,” week-long series on the web-based magazine, *Grist*, about work on an environmental health project in Tamale, Ghana, sponsored by World Bank Institute and Sister Cities International, 16-20 March 2004.

Blogger for The Courier-Journal’s [KentuckianaGreen](http://www.kentuckiagreen.com) web site.

## Educator and Facilitator

I am a state-certified environmental educator experienced in reaching wide audiences. Most of my work has involved communicating technical topics in audience appropriate—and, in some cases, cross-cultural—terms: promoting energy efficiency and pollution prevention to CEOs, translating regulations for field personnel, demonstrating real-world applications of lessons to educators or teaching science, critical thinking and ethics to students (K-12 through graduate school). Also experienced in the facilitator-moderator role.

Developed and taught a new interdisciplinary Honors Scholars Seminar in green design at the University of Louisville, SPR 11 semester. Assisted with the development and delivery of similar new graduate course at UofL’s Speed School of Engineering, SPR 08.

Created and operated the interdisciplinary, educational field-trip program for 5<sup>th</sup> graders, *After We Flush*, at a wastewater treatment plant, including lesson plans, assessments and other teaching aids based on core content, Bloom’s Taxonomy of Cognitive Skills and multiple intelligences theory; won national Association of Metropolitan Sewerage Agencies award.

Assisted with redesign/delivery of Lincoln Foundation 08 summer math & science program

Wrote the *Aqua Venturer Teacher Guide*, published by the national Water Environment Federation, 2002, to assist middle- and high-school teachers and students with researching their community's environmental history using primary sources.

Authorized trainer for theclimateproject.org, based on *An Inconvenient Truth*.

### **Energy/Environmental Auditor**

I have audited facilities, large and small, for energy efficiency (E2) and compliance with federal, state and local environmental and safety regulations and Best Management Practices, and made cost-effective improvement recommendations, including the following examples:

Initiated MSD environmental auditing team and environmental management system (EMS). Facilitated E2 efforts that saved \$250,000+ annually, via Energy Star and other programs.

Taught Project Warm workshops on energy efficiency, targeted to low-income consumers.

Cunningham, S. L., PE, Bell, W. F. and Sweeney, M. W., PhD, PE, *Pollution Prevention Through Energy Efficiency at A Public Wastewater-Stormwater Utility*, Water Environment Federation, 2001 WEFTEC Proceedings (reprinted in *International Water & Irrigation*, Vol. 22, No. 3, 2002).

Cunningham, S. L., *Environmental Audit Program, Phase: Erosion Prevention & Sediment Control, Cycle One: Baseline, 1998*. Louisville and Jefferson County Metropolitan Sewer District.

Audited various area businesses and non-profit organizations, including the Ohio River Sanitation Commission, Sisters of Charity of Nazareth and the KY Foundation for Women.

### **Expert Witness**

Besides having served as prosecuting witness for dozens of criminal complaints on behalf of the Metro Health Department, I have served as expert witness on the following cases:

- Givhan v. City of Mount Washington
- Butchertown Neighborhood Association, appeal of Board of Zoning Adjustment ruling
- Lumpkins v. Morehead Utility Board
- AOK Storage, LLC v. Louisville Water Company

### **Education and Certifications**

**Master of Science**, Interdisciplinary Studies, with a major in environmental education and a minor in environmental history, University of Louisville, 2006

**Bachelor of Applied Science**, Environmental Engineering, University of Louisville, 1981

**Professional Engineer**, Commonwealth of Kentucky, License #16592

**Nonformal Environmental Educator**, Commonwealth of Kentucky, 2006

Continuing-education courses available upon request.

## Employment History

### **Environmental Education Coordinator**, MSD Executive Offices

June 2004 to December 2004 (Retired from government service.)

Provided tailored education programs to student, adult and community groups, showing each audience what MSD's public health mission meant to their lives and/or classroom learning. Designed needs-based agendas for and led visits from international peers.

### **CERES Principles Engineer**, MSD Executive Offices, December 1993 to June 2004

Facilitated and coordinated the progressive implementation of MSD's commitment to the CERES Principles (Coalition for Environmentally Responsible Economies), including environmental management systems (EMS), environmental auditing, biosolids management (including participation in the National Biosolids Partnership), energy efficiency (E2), pollution-prevention (P2), international affairs and public participation with citizen environmental groups. Participated on teams responsible for planning and overseeing construction of capital projects (up to \$65 million).

### **Planning Engineer**, MSD Engineering Division, June 1990 to December 1993

Reviewed, critiqued and approved connection requests, and plans and specifications for expanded and new wastewater treatment plants. Wrote small treatment plant design standards. Managed pilot composting project.

At MSD, I used my skills through various special projects to assist Executive Director Gordon Garner with shaping a culture of best practices, where employees believed management welcomed shop-floor ideas.

### **Water Pollution Control and Office Paper Recycling Programs Manager**

Louisville and Jefferson County Board of Health, January 1985 to June 1990

Regulated the operation, maintenance and effluent quality of 500 wastewater facilities, by supervising inspection, enforcement and stream monitoring. Oversaw design and development of PC-based enforcement tracking system. Drafted regulation revisions. Organized and managed office paper recycling program. Advised businesses, institutions and governmental agencies on office and community recycling programs.

By improving staff training, follow-through on orders for correction and prosecution, my team and I reduced recidivism, and improved local water quality and public health.

### **Environmental Engineer**, Division of Water, KY Dept of Environmental Protection, Frankfort, KY, September 1981 to January 1985

Wrote plain-English field handbook for the coal industry, outlining required erosion prevention and pollution control measures; supervised illustration. Assisted with similar construction industry handbook. Approved POTW compliance plans. Surveyed statewide wastewater facility needs, costs and financial impacts; analyzed data and proposed financing methods. Studied on-site wastewater treatment technologies, and drafted policy revisions.

## **Student Cooperative-Internships and Part-Time Employment**

June 1972 through July 1981

**Research Assistant**, Environmental Engineering Department; analyzed atmospheric data for the Ohio River Basin Energy Study for the US Congress.

**Project Manager**, Appalachia - Science in the Public Interest; designed Citizens' Stream Monitoring Project for physio-chemical analysis.

**Associate**, Hauck & Associates; edited energy and utility economics reports.

**Intern**, Jefferson County Energy Conservation Office; computed climate-based design criteria for locally-appropriate solar heating/cooling and energy-efficiency building code revisions.

**Consultant**, *The Courier-Journal*; researched beverage container deposit legislation and wrote report for legislators and newspaper editors.

**Intern**, Jefferson County Department of Environmental Protection; researched and responded to environmental impact statements and researched draft legislation.

## **Honors, Fellowships & Scholarships**

- 2005 Planner and Instructor, workshop on public works management in Kiev, Ukraine, for municipal officials participating in US-funded partnership project
- 2004 Technical reconnaissance team for pilot Millennium Development Goals project of Sister Cities International and World Bank Institute in Tamale, Ghana
- 2002 Association of Metropolitan Sewerage Agencies, national award to *After We Flush* for being an "outstanding and innovative . . . educational program"
- 2002 Lawn Care for Cleaner Air Award
- 2001 DinnerWorks table designer, Louisville Visual Art Association
- 2000 "My Millennium" series participant, four-page "poster," *The Courier-Journal*
- 1992 Young Career Woman Award, Business & Professional Women
- 1991 Spirit of Louisville Honored Volunteer Award
- 1989 German Marshall Fund of the United States and Institute for European Environmental Policy Fellowship; two-month internship with European recycling, composting and wastewater treatment program managers
- 1983 USEPA Safe Drinking Water Graduate Fellowship grantee
- 1974-76 U of L Speed Scientific School scholarships
- 1973 US Department of Health, Education & Welfare Scholarship
- 1972 First International Meeting of Environmental Engineers, Tel Aviv, Israel; only high school student selected to deliver a paper

**References, media experience, international technical assistance, language proficiencies, speaking engagements, community and professional involvement and travel history available upon request.**