

Environmental Science Program at Lincoln University in Missouri

Lincoln University's Environmental Science Program was established in 2006. It is part of the Department of Agriculture and Environmental Science within the College of Agriculture and Natural Science.

The program integrates education, research and outreach to prepare students for going into the environmental job market. It does so by providing high quality education and experiential learning while addressing current environmental problems that face Missouri's and the nation. Students learn cutting-edge research in order to develop sustainable solutions to these problems.



Research Highlights

The research program has partnerships with state and federal funding agencies. The innovative, cutting-edge research develops sustainable solutions to current environmental problems through multi-institution and multidisciplinary collaborations. Other research includes greenhouse facilities, farming, and laboratories equipped with state-of-the art analytical instruments, workstations, and software tools. Current research focuses on climate change, bio-renewable energy, environmental monitoring, risk assessment, water quality and watershed management, and remedial technology. Here is a list of some of the current research projects:

- Human health and ecological risk reductions of heavy metal-contaminated soils by in situ immobilization or surface-coating technology



Cooperative Extension and Research

- Carbon sequestration and greenhouse gas emission from soil as affected by various crop-forest ecosystems
- Cultivating algae using carbon dioxide (CO₂) generated from power plants and biomass for biofuel bioenergy production
- Enhanced metal or organic removal from water by surface-modified carbon and nano-materials
- Characterization and source tracking of dissolved organic carbon/dissolved organic nitrogen and pathogens in aquatic systems by fluorescence spectroscopy and molecular biotechnology
- Hydrological modeling for chemical control in agricultural watershed
- Behaviors of pesticide surfactants in soil and their impacts on soil and water quality
- Development of bio- and optical sensors for environmental contaminant detection
- Impacts of prescribed fire on water quality in an oak/hickory forest in the Missouri Ozarks



Biochar samples.

- Spatial and temporal variation of water quality as affected by land uses or urbanization
- Rhizodegradation of army munitions explosives residues in soil by specific native grasses
- Improving drinking water quality for small rural communities in Missouri
- Improving vegetable safety through beneficial microbe interactions
- Biochar production from various sources and environmental applications
- Human genotoxicity as induced by selected pesticides



Algae samples.