ENVIRONMENTAL RESEARCH CENTER FOR EMERGING CONTAMINANTS (ERCEC)

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The mission of the Environmental Research Center (ERC) is to provide the infrastructure and coordinated faculty base to conduct wide range of large-scale federally-funded research initiatives designed to protect public health from emerging contaminants. ERC investigators conduct research sponsored by a wide range of entities including the NSF, USEPA, USDA, USGS, Missouri Department of Natural Resources, American Water Works Association Research Foundation, as well as industry in Missouri and elsewhere.

Examples of current research areas in the ERC include: occurrence and control of antibiotics and antibiotic resistant bacteria at concentrated animal feed operations (CAFOs) and in drinking water; occurrence, fate and removal of estrogenic, endocrine disrupting chemicals, disinfection byproducts, pharmaceuticals, and cyanobacterial toxins in drinking water and wastewater treatment plants; reactions of indoor air pollutants in home and business environments; phytoremediation technology for treatment of organic contaminants in soil and groundwater; nutrient control using struvite precipitation; control of heavy metals with constructed wetlands; control of odor emissions from CAFOs; fate of mercury in incinerator flyash; treatment of MTBE and alternative fuel oxygenates; and transport of lead and zinc in Missouri rivers in the Old and New Lead Belts.

Laboratories associated with the Environmental Research Center maintain state-of-the-art instrumentation including: a wide variety of gas chromatographs with mass spectrometer and other detectors; high pressure liquid chromatographs with mass spectrometer and UV detectors; ion chromatograph; total organic carbon analyzer; atomic absorption spectrometers with graphite furnace and flame combustion; inductively couple plasma mass spectrometer with laser ablation; a wide variety of ultraviolet and visible spectrophotometers; stopped flow spectropho-meter; molecular biology tools including polymerase chain reaction (PCR) instrumentation and denaturing gradient gel electrophoresis (DGGE) and clone libraries; microscopes; respirometers; and wide variety of other instruments. Specialized research equipment and facilities include temperature control rooms; a trailer-mounted experimental water treatment system; a trailer-mounted mobile air pollution analysis laboratory; a rooftop greenhouse; pilot-scale air stripping system; pilot-scale advanced oxidation and ozonation systems; laminar flow hoods; anaerobic microbiology facilities; and a variety of other research equipment. The original Environmental Research Center (ERC) was established in 1965. Phone: 573-341-6908. E-mail address is erc@mst.edu or visit the website at: http://erc.mst.edu/.