

KS-LSAMP SUMMER 2019

OPPORTUNITIES IN GEOSCIENCE

Research Activities

The environmental chemistry and microbiology research group led by Dr. Matthew Kirk has funding to support two KS-LSAMP students. Those students will have a wide range of opportunities available to them. Depending on their interests, they can help collect samples in streams and soils, maintain sensor arrays that track environmental conditions, carry out microbiology experiments, analyze water and gas chemistry, and more. The main projects we are working on are described below.

About RiPS

Research Immersion Pathways to STEM (RiPS) is the Kansas Louis Stokes Alliance for Minority Participation (KS-LSAMP) summer research program. Key information about the program follows:

- **Timing:** June and July
- **Support:** the program covers housing and meals (K-State dorms) and provides students with a \$3,000 scholarship
- **Overall goal:** provide academic and professional preparation to underrepresented students in STEM fields
- **Application deadline:** March 8, 2019

Research projects in Dr. Kirk's lab

Microbiomes of Aquatic habitats, Plants, and Soils (MAPS)

We are working with researchers across Kansas to better understand impacts of human activities and precipitation on the chemistry and microbiology of streams, plants, and soils. Our team's efforts focus on soils and links between streams and soils. Knowledge gained from the overall study can help us increase agricultural productivity while limiting the negative impacts to soil and water quality.

Environmental Controls on Microbial Methane Production

We are carrying out laboratory experiments to examine how changes in conditions affect interactions of methane-producing microbes with iron-respiring microbes. The knowledge gained from this study can be used to better predict formation of methane, the main component of natural gas. It can also be used to improve prediction of greenhouse gas release from natural environments.

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