Industrial hygiene air sampling/analysis of microcystin in Lake Erie region

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Symptoms and illnesses have been associated with recreational exposure to cyanobacteria with the most common reported including hay fever like symptoms, pruritic skin rash, and gastrointestinal symptoms. The pilot project will be the first step to explore these emerging issues, especially those related to occupationally exposed groups. Available reports have focused primarily on different geographic regions and smaller inland lakes. Little to no information is available on airborne microcystin on or near Lake Erie, which is an important source of drinking water and recreational use in Northwest Ohio. In order to evaluate the possible hazards of recreational, occupational, and community environments, this project aims to examine industrial hygiene monitoring methods to sample airborne microcystin in different lakeside environments. This project will employ novel concepts and methods to address unconventional industrial hygiene monitoring in uncommon locations. Air samples will be collected with a pump at 10.6 lpm using an IOM sampler during peak algal bloom occurrences in predetermined locations: on and off shore of Lake Erie; a commercial boat house; and a control location. Sampling will be repeated on at least three occasions. Water samples will also be collected. Air and water samples will be analyzed using the microcystins-ADDA ELISA test. This proposed project combines environmental and occupational health approaches that are both relevant and timely. By exploring sampling methodology for airborne microcystin, we will relay the available information to recreational and occupational users. It is expected that the public and workers who live and work around the lake will be more informed about the air quality on Lake Erie and its shores.

University of Cincinnati
16th Annual
Pilot Research Project
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Pilot Research Training Program (PRP) Overview

Welcome to the University of Cincinnati Education and Research Center's (ERC) **16th Annual Pilot Research Project (PRP) Symposium** on October 8-9, 2015, held in the Auditorium of the Engineering Research Center, College of Engineering. The purpose of the PRP is to increase the research capacity of research trainees and young investigators in occupational health and safety and to encourage those in related disciplines to pursue occupational health and safety research.

Under the administrative direction of Dr. Amit Bhattacharya, research proposals are solicited and peer-reviewed annually from qualifying faculty and graduate students from the **University of Cincinnati and the following PRP partnering institutions – Air Force Institute of Technology, Bowling Green State University, University of Toledo – Health Science Campus, Central State University, Purdue University, University of Kentucky, Western Kentucky University, Eastern Kentucky University, Murray State University, Ohio University and Kentucky State University.**

At this symposium, the 2014-15 awardees will be presenting the results of their research and the 2015-16 awardees will make poster presentations of their proposed work. The keynote speaker on Thursday, October 8, 2015 is **James Thompson, PhD, PE**, Chief of the Hearing Loss Prevention Branch of the Office of Mine Safety and Health Research under NIOSH, will deliver the keynote address on "**Noise Control of Large Mining Machines**."

The University of Cincinnati's Education and Research Center is one of 18 such centers funded by the National Institute for Occupational Safety and Health (NIOSH) nationally. Dr. Tiina Reponen serves as the director of the ERC, which is based in the university's Department of Environmental Health within the College of Medicine. The purpose of the ERC is to train professionals in the didactic and research skills necessary to lead the occupational safety and health disciplines. Results of research are translated into action through an outreach program and shared with professionals and practitioners in the region via continuing education.

Since 1999, the PRP program has allocated over $1.2 million to support 213 pilot research projects. These projects have served as a catalyst in bringing over $34 million in additional research support to the region from sources independent of the PRP program, such as, the National Institute for Occupational Safety and Health (NIOSH), National Institutes of Health (NIH), United States Department of Agriculture (USDA), National Science Foundation (NSF), and the Centers for Disease Control and Prevention (CDC). Additionally, the PRP has brought

46 new investigators from other fields of expertise to the area of occupational safety and health research.

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