Postdoctoral Research Program
U.S. Environmental Protection Agency
National Risk Management Research Laboratory
Cincinnati, Ohio

Project Number: NRMRL/LRPCD–2007–03

Measuring the Fate and Transport of Microbiological Pathogens Originating from Animal Waste in the Environment

A postdoctoral research project is available at the U.S. Environmental Protection Agency (EPA) National Risk Management Research Laboratory (NRMRL) in Cincinnati, Ohio. The appointment will be in NRMRL's Land Remediation and Pollution Control Division (LRPCD). EPA is seeking a postdoctoral fellow with experience and expertise in measurement of microbial pathogens in the environment using both cultural and molecular methodologies. The fate and transport of pathogenic microorganisms in the environment is an area of great importance with regard to the health and welfare of the people of the United States.

The fellow will investigate the fate and transport of microbial indicator organisms and pathogens in the environment using conventional and experimental methods. Significant gaps in knowledge exist with regard to the fate and movement of microorganisms from animal waste application sites to receiving waters. There are also significant gaps in knowledge concerning the relationship of indicator organisms to the occurrence of pathogens in animal waste and in environmental media. Similarly, agricultural management practices have in the past focused on controlling erosion and movement of nutrients from fields to streams. Do those management practices effectively control movement of microorganisms? Can better methods for detection of pathogens in the environment be developed that replace reliance on indicator organisms? Are there management practices that can be implemented that significantly enhance the control of microorganism movement? The successful applicant may pursue any of these research questions.

This project comes with numerous opportunities to build collaborations inside EPA and with other agencies. A self-motivated individual could have the opportunity to develop cooperative research with EPA Regional Offices, USDA, and university researchers. In addition, the participant will gain experience in developing research programs, quality assurance planning, and project management. The participant will engage in field and laboratory studies to meet the project goals which may involve some travel.

Applicants should have received a doctoral degree in soil microbiology, environmental microbiology, or a related discipline within three years of the starting date, or completion of all requirements for the degree should be expected prior to the starting date. The successful candidate should have a thorough understanding of conventional and innovative methods for analysis of environmental samples for microorganisms. Publication of research in peer reviewed journals is encouraged. Experience in field sampling and laboratory analysis of samples and experience with different genetic analysis techniques are highly desirable. Applicants should have knowledge of large scale animal agriculture issues related to waste management, microbiological methodologies for analysis of environmental samples for indicator organism and molecular analysis of potentially pathogenic microorganisms. Applicants should be self motivated and possess good analytical, writing, and project design

skills. The applicant should be able to interact with a wide range of persons to accomplish project goals.

The program is open to all qualified individuals without regard to race, sex, religion, color, age, physical or mental disability, national origin, or status as a Vietnam era or disabled veteran. U.S. citizenship or lawful permanent resident status is preferred (but can also hold an appropriate J1 visa status, however, an H1B visa is not appropriate).

The participant will be selected based on academic records, recommendations, research interests, compatibility of background and interests with research programs and projects at NRMRL/LRPCD, and the availability of funds, staff, programs, and equipment.

The appointment is full time at NRMRL/LRPCD for one year and may be renewed upon recommendation of NRMRL/LRPCD and subject to availability of funds. The participant will receive a monthly stipend up to $5,400 depending on background and experience. Limited inbound travel and moving expenses may be reimbursed according to established policies. The participant must show proof of health and medical insurance. This can be obtained through ORISE. The participant does not become an EPA employee.

The mentor for this project is Dr. John R. Haines of the NRMRL/LRPCD.

The Postdoctoral Research Program for NRMRL is administered by the Oak Ridge Institute for Science and Education. ***Please reference Project # NRMRL/LRPCD-2007-03 when calling or writing for information.*** For additional information and application materials contact: Postdoctoral Research Program/NRMRL, Attn: Betty Bowling, Science and Engineering Education - MS 36, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, Tennessee 37831-0117, Phone: (865) 576-8503 FAX: (865) 241-5219 e-mail: **betty.bowling@orau.org.**

An application can be found at www.orau.gov/orise/edu/EPA/app-gugrgpd.pdf