

August 13, 2003 * 8:30 a.m. – 4:30 p.m.



Science To Achieve Results

STAR Grant Seminar

Sponsored by:

**EPA Region 7 and EPA's National Center for
Environmental Research**

U.S. EPA Region 7 Office

901 N. 5th Street

Kansas City, Kansas



US EPA Region 7
901 N. 5th Street
Kansas City, Kansas 66101

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STAR Grant Seminar • Wednesday, August 13, 2003 • 8:30 a.m. - 4:30 p.m. • U.S. EPA Region 7 Regional Office
(Plaza Level Conference Rooms)

Seminar Overview

This seminar will feature presentations from recipients of the Office of Research and Development's Science to Achieve Results (STAR) Grants, sponsored by the National Center for Environmental Research. This is a rare and unique opportunity for federal, state, and tribal scientists and engineers to learn about a variety of projects, including environmental monitoring, innovative technologies for site remediation, and waterborne diseases, to studies on health effects from contaminant exposures.

Don't miss this unique opportunity to hear from scientific experts and learn about how their discoveries might have an impact on environmental science and policy making, your environmental program, your project, your state, and your community.

Who Should Attend

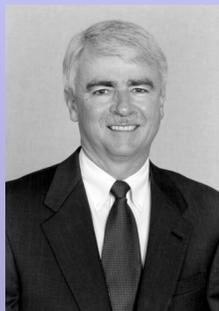
Speakers and research projects were specifically selected to address the needs and interests of federal, state, and tribal environmental employees in Region 7. The purpose of this seminar is to educate and engage discussion between researchers and scientists from federal, state, and tribal environmental programs on the latest state of the art in environmental research. The seminar also will give researchers in Region 7 the opportunity to discuss their research in the context of EPA Region 7 environmental science needs and priorities.

Seminar presentations will revolve around the three priority themes established by Region 7 to address cross-cutting issues important to the region. The priority themes are:

- Protection of Critical **E**cosystems
- Protection of Sensitive **P**opulations
- Environmentally Protective **A**griculture

Welcome! From Conference Co-sponsors and Guest Speakers

"It brings me great pleasure to welcome everyone to the Region 7 Environmental Research Seminar. We have a diverse group of organizations represented, which will give us the opportunity to learn and experience a variety of perspectives as we forge a pathway to scientific excellence. This seminar represents another significant step in EPA's efforts to expand Strategies, Tactics, And Results. I hope to see you all at this event. Again, welcome!"



James B. Gulliford

Regional Administrator, US EPA Region 7



"This workshop gives you the opportunity to interact with some of the area's leading scientists conducting research on issues of critical importance to our region. The STAR grantees are an important part of EPA's research program and provide us with the nation's best scientists and engineers from both academic and nonprofit research centers. Please join us for this special event."

Dr. Paul Gilman

*EPA Science Advisor and Assistant Administrator,
Office of Research and Development*

Seminar Specifics

For more information on this seminar contact Brenda Groskinsky at (913) 551-7188 or groskinsky.brenda@epa.gov.

Date: Wednesday, August 13, 2003

Time: 8:30 a.m. - 4:30 p.m.

Location: US EPA Region 7
901 N. 5th Street
Kansas City, KS
Plaza Level Conference Rooms



4:00 p.m. - 4:30 p.m.

Earnhart



Dietrich Earnhart, Ph.D.

Professor of Economics
University of Kansas

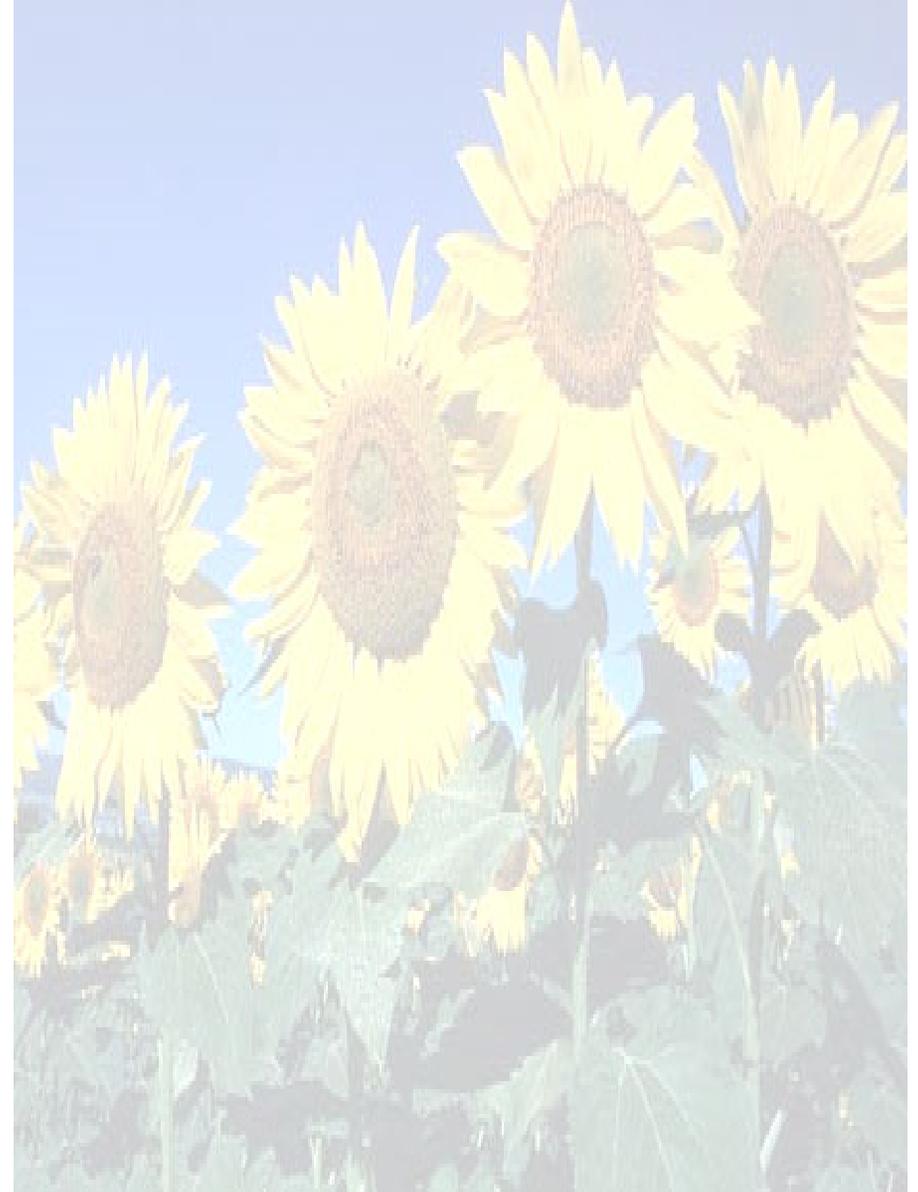
The Effects of Regulatory Factors on Facility-Level Environmental Performance: A Study of Wastewater Discharges by the Chemical Manufacturing Industry

This research attempts to integrate the fields of economics, political science, law and engineering management to determine the factors shaping corporate environmental performance at individual chemical manufacturing facilities. We seek to compare the effects of government intervention (e.g., federal vs. state inspections), compare the effects of specific deterrence and general deterrence, and capture the influence of community pressure using community characteristics as proxies.



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US EPA Region 7
EPA's National Center for Environmental Research



Agenda

8:30 - 9:00	Welcome James B. Gulliford , Regional Administrator, EPA Region 7 Paul Gilman , EPA Science Advisor Assistant Administrator, EPA Office of Research and Development
9:00 - 9:30	Effects of Ethanol on BTEX Natural Attenuation by Pedro J.J. Alvarez, Ph.D.
9:30 - 10:00	Rural Asthma Study by Angela Kuehl, M.S., Pharm.D.
10:00 - 10:30	Morning Break
10:30 - 11:00	X-ray C-based Assessment by Beverly Cohen, Ph.D.
11:00 - 11:30	Metals Removal by Wetlands by Mark Fitch, Ph.D.
11:30 - 12:30	Lunch (on your own)
12:30 - 1:00	Bacterial & Nutrient Reduction by George Marchin, Ph.D.
1:00 - 1:30	Atrazine in Surface Soils by Alok Bhandari, Ph.D.
1:30 - 2:00	Classifying Reference Conditions in Streams by Charles P. Hawkins, Ph.D.
2:00 - 2:30	Nitrate Reduction by Tian C. Zhang, Ph.D.
2:30 - 3:00	Lake and Reservoir Strategy for NE by John Holz, Ph.D.
3:00 - 3:30	Afternoon Break
3:30 - 4:00	Water Quality in Midwestern Lake Ecosystems by Catherine Kling, Ph.D.
4:00 - 4:30	Regulatory Env. Performance by Dietrich Earnhart, Ph.D.

Adjourn

2:30 p.m. - 3:00 p.m.

Holz



John Holz, Ph.D.
Assistant Professor
University of Nebraska at Lincoln

Development and Implementation of a Comprehensive Lake and Reservoir Strategy for Nebraska

This research focuses on developing a comprehensive classification scheme for agriculturally dominated ecosystems by: 1) establishing a protocol for aggregating water bodies in agricultural ecosystems into classification strata and identifying reference condition for these classes; and 2) establishing the role of remote sensing and GIS in a classification strategy. Interesting, the Level IV Ecoregions do not accurately represent water quality of Nebraska's reservoirs or natural Sand Hills lakes.

3:30 p.m. - 4:00 p.m.

Kling



Catherine Kling, Ph.D.
Professor of Economics
Iowa State University

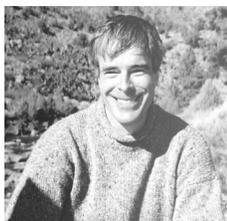
Valuing Water Quality in Midwestern Lake Ecosystems: Temporal Stability and the Role of Information in Value Formation

In this project, economists and ecologist join forces to assemble an extensive panel data set of revealed and stated preferences concerning Iowa lakes. In conjunction, an ongoing ecological effort was utilized to collect detailed water quality data on these same lakes in overlapping years.



1:30 p.m. - 2:00 p.m.

Hawkins



Charles P. Hawkins, Ph.D.
Professor of Aquatic Ecology
Utah State University

Evaluation of the Performance of Different Approaches to Classifying Reference Conditions in Streams

This project is designed to identify the type and level of stream classification that is optimal for bioassessment purposes by asking, 1) How is the sensitivity of assessments affected by the approach used to classify sites, the type of assemblage examined, and the spatial scale of the classification? and 2) Are approaches to site classification transferable among regions?

9:00 a.m -9:30 a.m.

Alvarez



Pedro J.J. Alvarez, Ph.D.
Professor, Department of Civil and Environmental Engineering
University of Iowa

Effects of Ethanol on BTEX Natural Attenuation

The use of ethanol as a gasoline additive is likely to increase in the future as a means to decrease air pollution by automobile emissions and also decrease our dependence on foreign oil. Nevertheless, the presence of ethanol may lead to indirect impacts related to natural attenuations of BTEX compounds (i.e., benzene, toluene, ethyl benzene, and xylene) and the overall impact that this has on the environment.

2:00 p.m. - 2:30 p.m.

Zhang



Tian C. Zhang, Ph.D.
Associate Professor
University of Nebraska at Lincoln

Enhancement of Nitrate Reduction in Zero-Valent Iron Promoted Processes

This study focuses on the enhancement of nitrate reduction by adding organic buffers or some selected cations in feed solution.

9:30 a.m -10:00 a.m.

Kuehl



Angela Kuehl, M.S., Pharm.D.
Rural Childhood Asthma Study Proj. Coordinator
University of Iowa College of Public Health

Multi-component Intervention Study of Asthma in Children from Rural Communities

This community-based study that tested the effect of a multi-component intervention by comparing asthma health outcomes and change in environmental exposures. The study also compares rural and town cases of asthma in children.



10:30 a.m - 11:00 a.m.

Cohen



Beverly S. Cohen, Ph.D.
Professor of Environmental Medicine
New York University School of Medicine

X-ray CT-based Assessment of Variations in Human Airway Geometry

Few data are available regarding the regional deposition of particulate matter in the lungs of people with respiratory diseases and the elderly who may be at special risk of environmentally related lung disease. This presentation will provide a summary of particulate matter effects and transport within human lungs and the technology used to collect the data and model the results.

11:00 a.m. - 11:30 a.m.

Fitch



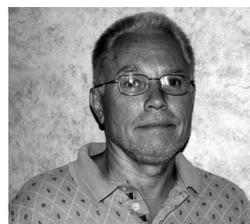
Mark Fitch, Ph.D.
Associate Professor
University of Missouri-Rolla

Constructed Wetlands for the Treatment of Neutral Mine Drain

This work, currently funded through the Midwest Hazardous Substance Research Center, is focused on the use of low-operating cost constructed wetlands to decrease the toxicity of neutral metal-tainted waste waters such as lead mine drainage, tailing leachates, some landfill leachates, and many industrial waste waters. The initial focus was efficacy, with 90-95% lead removal and 60-70% zinc removal observed, and near-zero toxicity of the wetland effluent.

12:30 p.m. - 1:00 p.m.

Marchin



George Marchin, Ph.D.
Professor of Microbiology
Kansas State University

Bacterial and Nutrient Reduction by Filter Strips in Agricultural Watersheds

Many Kansans receive their drinking water from surface waters such as lakes or rivers. Bacterial contamination and high nutrient levels have been identified in some of these bodies of waters. Runoff from beef feedlots can be a source for pollutants to be transported to surface water. Vegetative filter strips have been identified as an effective method for controlling nutrients leaving a feedlot. Few studies have been done to test the effectiveness of filter strips in a field setting. The purpose of this study was to evaluate the filter strips by determining their ability to reduce nutrients and bacteria in feedlot runoff.

1:00 p.m. - 1:30 p.m.

Bhandari



Alok Bhandari, Ph.D.
Associate Professor
Kansas State University

Atrazine in Surface Soils: Contact-Time Dependent Physicochemical Interactions

Atrazine continues to be a major surface water pollutant in the Midwestern United States due to its wide use as a weed killer on grain crops. The City of Kansas City spends about \$250,000.00 annually to keep atrazine below the city's drinking water MCL. The objective of this study was to investigate the fate and transport of the herbicide in the Hillsdale reservoir and its drainage basin.