



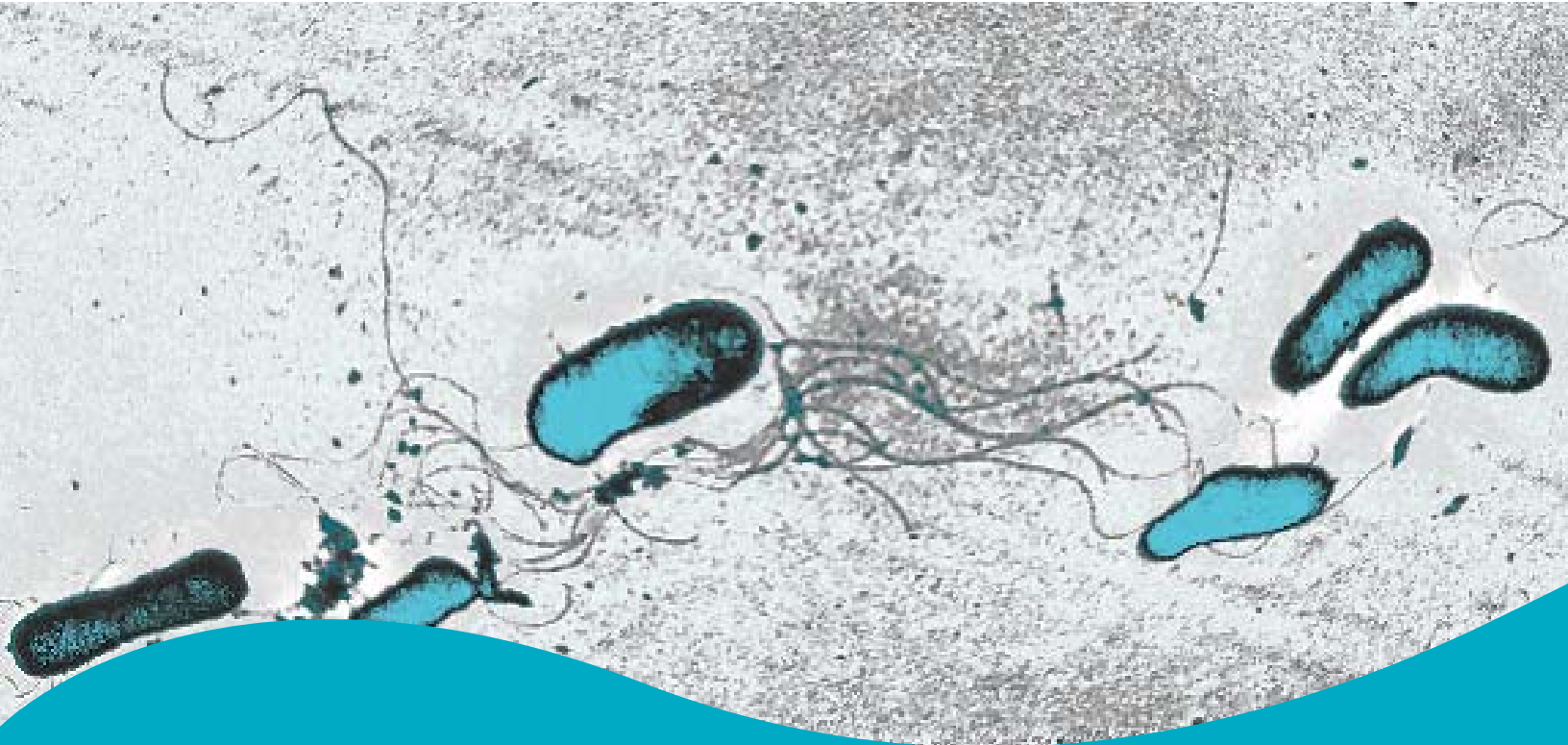
Soil and Water Science:

# Ecology of Bacterial Pathogens:

Keeping *E. coli* and *Salmonella* out of Water Supplies,  
Recreation Areas, Pet Shops and Agricultural Produce

University of Florida

Institute of Food and Agricultural Sciences



August 17 & 18, 2005

Gainesville, FL



UNIVERSITY OF  
FLORIDA

IFAS EXTENSION

Soil and Water Science Department

[soils.ifas.ufl.edu](http://soils.ifas.ufl.edu)

AUGUST 17 & 18, 2005  
GAINESVILLE, FLORIDA

This unique short course explores questions in bacterial ecology relevant to environmental quality issues. The main focus will be on the latest published research on bacterial contamination and persistence in drinking, industrial and irrigation water supplies, recreation areas and agricultural produce. We will also discuss in detail the efficacy of water quality tests during routine monitoring and after natural disasters and bioterrorism. Morning lectures will introduce *E. coli* and *Salmonella* and laboratory demonstrations will illustrate advantages and limitations of several culture-dependent methods to identify coliforms. Demonstration exercises will also test the effectiveness of common antibacterial chemicals in controlling planktonic and biofilm bacteria.

This two-day 13-hour course was developed for working professionals who have basic or modest background in biology. Course enrollment is limited to 30 people and a Certificate of Completion will be issued upon conclusion. For more information on the course, or to suggest additional topics for discussion, please contact the course facilitator, Dr. Max Teplitski.

#### Training Information:

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# Ecology of Bacterial Pathogens:

Keeping *E. coli* and *Salmonella* out of Water Supplies, Recreation Areas, Pet Shops and Agricultural Produce

## Introduction & Course Overview

*E. coli* and *Salmonella* are major causes of food- and water-borne illnesses, leading to 150,000 hospitalizations and 600 deaths annually. This short course was developed in response to growing public concern over the microbiological quality of our water supplies, agricultural produce and recreation areas. Lectures, discussions and laboratory demonstrations will build on your expertise and help you optimize environmental management and monitoring programs to avoid these preventable illnesses.

### Who Should Attend?

- ▶ Agricultural Engineers
- ▶ City and County Government Officials and Decision-Makers
- ▶ Consultants
- ▶ Developers
- ▶ Ecologists
- ▶ Environmental Engineers
- ▶ Environmental Regulators
- ▶ Environmental Scientists
- ▶ Extension Agents
- ▶ First Responders
- ▶ Journalists
- ▶ Organic Farmers
- ▶ Small Business Owners
- ▶ Waste Managers
- ▶ Water Scientists
- ▶ Others Seeking Training in Bacterial Ecology

## 5 Ways to Benefit

### As a participant of this short course:

1. You will learn about the basic biology, survival strategies and spread of *E. coli* and *Salmonella*.
2. Lectures and laboratory demonstrations will clarify different microbiological quality testing techniques. Upon completion of this course, you will be equipped to choose commercial testing methods, which best fit your specific needs.
3. Summaries of the research presented during the course will help you rationalize management program details to monitor, control and eliminate *E. coli* and *Salmonella* outbreaks. Course discussions should inspire you to introduce new, more effective environmental, water or waste management programs.
4. You will learn about the latest published research to control and reduce *E. coli* and *Salmonella* contamination of poultry, cattle, pigs, pets, and agricultural produce.
5. You will be able to put the latest news stories into their proper biological and historical framework.

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## Course Instructor



Dr. Max Teplitski is an Assistant Professor in the Department of Soil and Water Science at the University of Florida/IFAS. His research focuses on molecular ecology of soil and water bacteria. Dr. Teplitski studies genetic mechanisms, which allow *Salmonella* and related bacteria to survive in soil and water environments outside their animal hosts. Dr. Teplitski is a recipient of W. E. Krauss Director's Award for Excellence in Research from the Ohio Agricultural Research and Development Center. More information about him can be found on his website <http://soils.ifas.ufl.edu/personnel/teplitski.html>

## Registration Information

Enrollment in this course is limited to the first 30 participants, and registrations will be accepted on a first-come, first-served basis. Advance registration is required to participate and the final deadline to register is Friday, August 12 or until the course is full.

All figures are presented in US dollars (\$).

<b>Early Reduced Registration</b>	<b>\$300</b> (on or before July 15, 2005)
<b>Regular Registration</b>	<b>\$350</b> (after July 15, 2005)

### What Does the Fee Include?

The full registration fee includes one copy of the printed course manual, course instruction, training materials and daily refreshments. Participants are on their own for all meals.

## How to Register

Register **ONLINE** via the short course web site at: <http://soils.ifas.ufl.edu/> and **pay in One of FOUR Easy Ways**

- 1. BY CREDIT CARD:** Register online and pay by credit card using our secure server.
- 2. BY FAX:** Submit your registration online and then FAX a copy of the printed online form with your credit card information indicated directly on the form.
- 3. BY MAIL:** Register online and mail a check, money order or purchase order, to the University of Florida/ IFAS Office of Conferences & Institutes (OCI) as directed on the form.
- 4. BY INVOICE:** Submit your registration online, and check the box to request an invoice to be mailed to your organization's accounting department.

**A receipt and confirmation of registration will be mailed within 10 working days upon receiving your completed registration and proper payment.** Payment must be postmarked by the applicable deadline to qualify for the reduced early fee. **REFUND POLICY:** Requests for registration refunds will be honored if written notification of cancellation is received by the Office of Conferences no later than August 1st, 2005. A \$75.00 processing fee will be deducted from all refunds.

**SPECIAL NEEDS:** Participants with special needs can be reasonably accommodated by contacting the Office of Conferences & Institutes at least 10 working days prior to the conference. We can be reached by phone at 1-352-392-5930, by fax at 1-352-392-9734, or by calling 1-800-955-8771 (TDD), within the state of Florida.

## Location

**Training Site:** This course will be held on the University of Florida campus in McCarty Hall. A map with detailed directions to the training site and parking instructions will be mailed to you upon receipt of your registration.

**Hotel Accommodations:** Several hotel and motel establishments are available in the Gainesville area to provide guest room accommodations throughout the course. Participants are responsible for making their own hotel guest room reservations and a list of properties and applicable guest room rates will be sent to you upon request.

## Daily Agenda

**Wednesday, August 17, 2005**

9:00am - 5:00pm Lecture & Labs

**Thursday, August 18, 2005**

8:00am - 4:00pm Lecture, Labs & Discussion

## Course Topics

This course will focus on questions surrounding *E. coli* and *Salmonella* such as:

- ♦ Are all *E. coli* and *Salmonella* pathogenic in humans? What are the disease symptoms? Who is at risk? Are there long-term effects of the diseases caused by *Salmonella* or *E. coli*? What are the treatment options?
- ♦ How concerned should I be about multi-drug resistant *E. coli* and *Salmonella*? Where do these multi-drug resistant bacteria come from?
- ♦ How do bacteria survive in water, pets, soils, vegetables and other agricultural products? What are biofilms?
- ♦ What are the sources of bacterial contamination in drinking water, recreation areas and agricultural produce (eggs, sprouts, vegetables, meats, nuts)?
- ♦ What are the different methods to monitor and control *Salmonella* and *E. coli* in drinking water supplies and recreation areas? Are these methods sufficient? Which testing method is the most economical and meaningful?
- ♦ What is the latest research on monitoring water quality after natural disasters? Are scientists evaluating various techniques and devices to provide drinking water after natural disasters?
- ♦ How can I prevent coliform contamination of my produce? Should organic farmers be more (or less) concerned?

### We Will Discuss Lessons Learned From:

- ♦ The recent *E. coli* and *Salmonella* outbreaks in petting zoos, pet shops, state fairs and farm shows.
- ♦ Walkerton, ON (2000) *E. coli* contamination of drinking water.
- ♦ Recent multi-state outbreaks of gastro-intestinal illnesses caused by agricultural produce (sprouts, tomatoes, melons and salad greens).
- ♦ Bioterrorism attack in Dalles, OR (1984).
- ♦ Successful programs world-wide to control *Salmonella*, *E. coli* and other water-borne bacterial pathogens.

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