



## Water-Quality Information -- Microbial Source-Tracking and Detection Techniques

(Related terminology - "bacterial source tracking (BST)" and "molecular microbial technologies")

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Links are provided below to general information on microbial source-tracking and detection techniques, such as ribotyping (DNA fingerprinting), genetic enterovirus detection using PCR/rtPCR and IC/PCR, and pulse field gel electrophoreses (PFGE).

- **Biological Consulting Services of North Florida**, commercial web page  
George Lukasik and Troy Scott  
"Microbial Source Tracking" -- <http://www.microbioservices.com/microbial-source-tracking.htm>  
See also **Source Molecular Corporation** -- <http://www.sourcemolecular.com/>  
Contents:
  - Supporting information
  - Services
  - References
  
- **European Union consortium**, methods comparison research web page  
Anicent Blanch  
"Tracking the origin of faecal pollution in surface water" --  
<http://www.ub.es/microbiologia/TOFPSW.htm>  
Contents:
  - Summary
  - Objectives
  - Results
  - Dissemination
  - Consortium
  
- **Institute for Environmental Health**, commercial web page  
Mansour Samadpour  
"Microbial Source Tracking" -- <http://www.iehinc.com/mstindex.htm>  
See also: **Aquavic** in Victoria, British Columbia --  
<http://www.aquavic.com/Services/services.html#microbial>
  - **Soil and Water Conservation Society of Metro Halifax**, information web page  
S.M. Mandaville  
"Bacterial source tracking, a review" -- <http://lakes.chebucto.org/H-2/bst.html>  
Contents:
    - Abstract/Summary
      - A "Toolbox" approach
      - Low cost but reliable methodology - the *Bacteroides-Prevotella* group
      - Ribotyping
      - Microbial Source Tracking Workshop, February 2002
    - Introduction
      - Erroneous assumptions of fecal sources
      - Microbiological Indicators
    - Well published investigators conducting research in BST
    - DNA-select interesting articles

- **Southern California Coastal Waters Research Program** and **U.S. EPA**, methods comparison research web page  
Steve Weisberg and Alfred Dufour  
"Microbiological source tracking workshop" --  
[http://www.sccwrp.org/tools/workshops/source\\_tracking\\_workshop.html](http://www.sccwrp.org/tools/workshops/source_tracking_workshop.html)  
Contents:
  - Workgroup findings and recommendations
  - Agenda and abstracts from the workshop
  
- **University of Michigan**, method web page  
Frans de Bruijn  
"The rep-PCR genomic fingerprinting homepage" -- <http://www.msu.edu/~debruijn/loadr.html>  
Contents:
  - Basic Articles
  - Rep-PCR relevant links
  - Submit your links
  - The Rep-PCR Patent
  - How does Rep-PCR work
  
- **University of Minnesota**, research web page  
Mike Sadowsky  
"*E. coli* source tracking by rep-PCR DNA fingerprinting " -- <http://www.ecolirep.umn.edu/>  
Contents:
  - Background
  - Overview
  - Methods
  - Patent
  - Glossary
  - Staff
  - Links
  - References
  - e-mail
  
- **USDA, CSREES**, Southern Regional Water Quality Program research web page  
contact unknown  
"Ribotyping and Bacterial Source Tracking (BST)" -- <http://srwqis.tamu.edu/bst.aspx>  
Contents:
  - Overview of the tools and links
  
- **USEPA**, source-tracking review, fact sheet  
Harry Zhang  
"Wastewater technology fact sheet: Bacterial source tracking" --  
<http://www.epa.gov/owm/mtb/bacsork.pdf>  
Contents:
  - Introduction
  - Description
  - Applicability
  - Advantages and Disadvantages
  - Performance
  - Costs
  - References
  
- **USGS**, resources and links  
[Application of molecular microbial technologies to USGS science](#)
  
- **Washington State University**, research web page  
Doug Call  
"Microarray Lab -- Microbial Source Tracking" --  
[http://www.vetmed.wsu.edu/research\\_vmp/MicroArrayLab/Webpages/MST.asp](http://www.vetmed.wsu.edu/research_vmp/MicroArrayLab/Webpages/MST.asp)  
Contents:

- Introduction
- Microarrays and MST

- **Wayne State University**, research and reference web page

Jeff Ram

"Microbial source tracking for Michigan environmental health managers" --

<http://sun.science.wayne.edu/~jram/MGLPF-MSTProject.htm>

Contents:

- Survey of Michigan Environmental Health Managers and water testing laboratories
- Survey of Microbial Source Tracking (MST) Services
- Summary, Methods, and Results of the Project
- Information about Microbial Source Tracking

Other sources of information:

- [Comparison of Seven Protocols to Identify Fecal Contamination Sources Using \*Escherichia coli\*](#), USGS-authored article in *Environmental Science and Technology*.
- [Sharing of Ribotype Patterns of Escherichia Coli Isolates During Baseflow and Stormflow Conditions](#), U.S. Geological Survey Scientific Investigations Report 2004-5004.
- [Reconnaissance of the hydrology, water quality, and sources of bacterial and nutrient contamination in the Ozark Plateaus Aquifer System and Cave Springs Branch of Honey Creek, Delaware County, Oklahoma, March 1999-March 2000](#), U.S. Geological Survey Water-Resources Investigations Report 00-4210.
- [Evaluation of water quality for two St. Johns River tributaries receiving septic tank effluent, Duval County, Florida](#), U.S. Geological Survey Water-Resources Investigations Report 03-4299.
- [Patterns and sources of fecal coliform bacteria in three streams in Virginia, 1999-2000](#), U.S. Geological Survey Water-Resources Investigations Report 03-4115.
- [Use of the Hydrological Simulation Program-FORTRAN and Bacterial Source Tracking for Development of the fecal coliform Total Maximum Daily Load \(TMDL\) for Accotink Creek, Fairfax County, Virginia](#), U.S. Geological Survey Water-Resources Investigations Report 03-4160.
- [Use of the Hydrological Simulation Program- FORTRAN and Bacterial Source Tracking for Development of the fecal coliform Total Maximum Daily Load \(TMDL\) for Blacks Run, Rockingham County, Virginia](#), U.S. Geological Survey Water-Resources Investigations Report 03-4161.
- [Use of the Hydrological Simulation Program- FORTRAN and Bacterial Source Tracking for development of the fecal coliform Total Maximum Daily Load \(TMDL\) for Christians Creek, Augusta County, Virginia](#), U.S. Geological Survey Water-Resources Investigations Report 03-4162.
- [Possible Sources of Nitrate in Ground Water at Swine Licensed-Managed Feeding Operations in Oklahoma, 2001](#) (Abstract), U.S. Geological Survey Water-Resources Investigations Report 02-4257.
- [Assessment of Possible Sources of Microbiological Contamination and Water-Quality Characteristics of the Jacks Fork, Ozark National Scenic Riverways, Missouri — Phase II](#) (Prepared in cooperation with the National Park Service), U.S. Geological Survey Water-Resources Investigations Report 02-4209.
- [Bacterial Indicator Occurrence and the Use of an F+ Specific RNA Coliphage Assay to Identify Fecal Sources of Homosassa Springs, Florida](#), USGS-authored article in *Microbial Ecology*, v. 39, no. 1, p. 56-64.

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URL: <http://water.usgs.gov/owq/microbial.html>

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