



BULLETIN AUGUST, 2011

WRRC Welcomes New Microbiologist Faculty Member

Dr. Marek Kirs has recently joined the faculty of WRRC filling a gap in the Center's expertise left by the retirement of Dr. Roger Fujioka.

Dr. Kirs' research focuses on microbial water quality and public health issues. Marek received his MSc from the University of Edinburgh (UK), PhD from the University of Rhode Island, and he completed his postdoctoral training at the University of North Carolina at Chapel Hill.

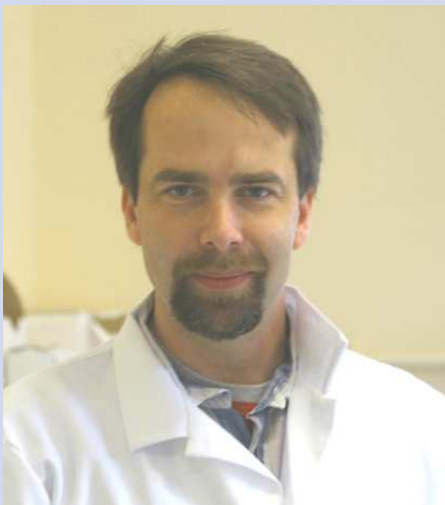
More recently Dr. Kirs worked at the Cawthron Institute in Nelson, New Zealand where he established microbial source tracking services and lead microbial water quality research and consultancy projects.

The Cawthron Institute provides research based solutions to enable the sustainable management and development of New Zealand's coastal and freshwater systems and resources for the benefit of the region and the nation.

Dr. Kirs has been the recipient of Fulbright and British Council scholarships and is well

published in major academic journals.

Marek's recent research includes microbial source tracking using F-specific coliphages and quantitative PCR, tracking microbial indicators and pathogens in recreational waters, and rapid methods for the quantification of enterococci.



Dr. Marek Kirs, WRRC's new Microbiologist

Dr. Kirs is well versed in molecular techniques which he has also applied to study microbial diversity, pathogen transport via ballast water, and food safety. Most importantly he is well known for developing rapid molecular techniques for water quality compliance. His is actively collaborating with several national and international laboratories located in the Pacific region.

WRRC's new microbiologist brings an impressive skill set to the new position including:

Molecular techniques:

DNA, RNA and protein extraction and purification, endpoint and quantitative PCR, RT-PCR and related amplification

techniques on multiple platforms, cloning, sequencing , FISH, etc.

Microbiology:

All basic microbiology skills, including work with viruses and obligate anaerobes. Strong microscopy skills, including transmission electron microscopy and scanning electron microscopy.

Systematics:

Phylogenetic analyses: ARB, PAUP, MrBayes, and other software.

Biostatistics:

Basic statistics, risk assessment (R, Perl, etc.).

Dr. Kirs' recent research projects include:

- Microbial source tracking using F-specific coliphages and quantitative PCR.
- Restoration initiatives in areas adjacent to shellfish harvesting and recreational waters in coastal North Carolina: Tracking microbial indicator and pathogen transport to resource waters.
- Rapid methods (TMA and QPCR) for the quantification of enterococci.
- Microbial communities in on-site wastewater systems.
- Alternative fecal indicator bacteria-microbial water quality.
- Assessment of qPCR methodology

for the quantification of toxigenic *Vibrio cholerae* in the ballast water.

- *Vibrio parahaemolyticus* and *Vibrio vulnificus* in commercially harvested North Island oysters (*Crassostera gigas*).

Marek is fluent in English, his native Estonian, and Russian. He also speaks some Danish and Finnish.

Marek Kirs can be reached by e-mail at kirs@hawaii.edu or by phone at (808) 956-9579.