GENETIC FAECAL POLLUTION DIAGNOSTICS: FROM SCIENCE TO PRACTICE
Hybrid workshop at WaterMicro23
4th June 2023, Darwin, Australia

Organisers: Andreas Farnleitner, Katalin Demeter, Claudia Kolm & Joan Rose

About the event
Date and time: 4th June 2023, 10:30 am to 12:30 pm ACST (1 am to 3 am UTC/GMT)
Venue: Darwin Convention Centre, room number t.b.a.
Website: https://aapevents.eventsair.com/watermicro23/workshop-2
On-site participation: attendance is free for conference participants
Online participation: free.
Link for online participants: will be made available on the website of the workshop one day before the workshop starts. Registration is not necessary.

Background and vision
Genetic methods, based on the detection of nucleic acids, have revolutionized Health-Related Water Microbiology research. Our systematic analysis has identified seven main application areas of genetic methods for faecal pollution analysis in water (Demeter et. al, FEMS Micr Rev, in revision). Given the consistency of methods and assessment types, the review suggests defining this emerging part of science as a *new discipline: genetic faecal pollution diagnostics* (GFPD). However, it is also clear that water utilities and government agencies still primarily rely on standardised, cultivation-based methods for water microbiology. Our next aim is to make a global assessment on how widespread is the use of genetic methods by water utilities and governments and to examine opportunities and barriers to use and acceptance. The assessment will be done using a survey, and its results are planned to be presented during a workshop at the World Water Congress 2024 in Toronto, Canada.

Aims of the workshop
In the first part of the workshop, participants will gain an overview of the main application areas of genetic faecal pollution diagnostics. In the second part, participants will be asked to test and improve the survey. The second part will be fully interactive using an online survey tool allowing

online and on-site participants to provide input equally well. A panel discussion with questions from the audience will round up the workshop.

Programme

Online event: Claudia Kolm, KL Krems & TU Wien, Austria

(i) **Welcome** *– Joan Rose, Michigan State Univ., USA & Andreas Farnleitner, KL Krems & TU Wien, Austria*

(ii) **Overview of application areas of GFPD**
    a. Overview of application areas *– Katalin Demeter, TU Wien, Austria*
    b. Pollution detection *– Orin Shanks, USEPA, USA*
    c. Multi-source microbial source tracking *– Georg Reischer, TU Wien, Austria*
    d. Risk assessment*– Alexandria Boehm, Stanford University, USA*
    e. Evaluation of treatment efficiency *– Warish Ahmed, CSIRO, Australia*

(iii) **Discussion of the survey using online tools** *– Moderators: Orin Shanks & Katalin Demeter*

(iv) **Panel discussion** *– Moderator: Joan Rose. Panellists: Orin Shanks, Georg Reischer, Alexandria Boehm, Warish Ahmed, Andreas Farnleitner*

(v) **Wrap-up** *– Joan Rose & Andreas Farnleitner*