

MEWE2019 Program Overview

	17 (Sun)	18 (Mon)	19 (Tue)	20 (Wed)			
8:30-							
9:00-	WS1	Session 18-0830	Session 19-0830	Session 20-0830			
9:30-					WS3	Coffee	Coffee
10:00-							
10:30-		Session 18-1030 <i>Supported by Kurita Water and Environment Foundation</i>	Session 19-1030	Session 20-1030			
11:00-		Lunch (MEWE Management Committee @Room Sakura)	Lunch (12:00-13:15)	Quick Lunch + MEWE Awarding Ceremony @Lunch room (12:40-13:30)			
11:30-							
12:00-	WS2	Session 18-1330	Poster 13:15-14:00 even numbers 14:00-14:45 odd numbers	Session 20-1340 (13:40-15:10)			
12:30-					WS3	Break	
13:00-			WS4				
13:30-		Coffee	Transfer to the port by bus	Closing - Poster Awards (15:20-16:00)			
14:00-		Session 18-1530					
14:30-			Sunset Cruise	Withdrawal			
15:00-							
15:30-	Opening Remarks + Opening Lectures	Poster 16:30-17:15 odd numbers 17:15-18:00 even numbers	Dinner Cruise				
16:00-							
16:30-	Welcome Reception		Bus				
17:00-							
17:30-							
18:00-							
18:30-							
19:00-							
19:30-							
20:00-							
20:30-							
21:00-							



17(SUN) Opening Lectures

16:30-18:00

Chair: Akihiko Terada, Japan

Opening remarks: Akiyoshi Ohashi, Hiroshima University, Japan

Opening lectures

Keynote

 **Ecophysiology of the Anammox Bacteria**
Dr. Satoshi Okabe, Hokkaido University, Japan

Keynote

 **The Microbiology of Drinking Water Systems in Shrinking and Expanding Resource-Constrained Cities and the Link to Public Health**
Dr. Nancy Love, University of Michigan, USA



18(MON) Oral Presentation

MEWE 2019 Nov. 17-20
Hiroshima Japan

8:30-10:00 Managing microbial communities

Chairs: Simona Rossetti, Italy & Masashi Hatamoto, Japan

Keynote

Assessing the contribution of microbial immigration in engineered water systems **Dr. Wen-Tso Liu, University of Illinois at Urbana-Champaign, USA**

Implications of Temperature Stresses on Micropollutant Removal in Biological Systems

○Paola Meynet, Newcastle University, United Kingdom

Assessing Community Structure, Assembly Mechanisms, and Function of Bacterial Taxa and Genotypes under Sustained Perturbation, Using Sludge Bioreactors at a Mesocosm Scale

○Ezequiel Santillan, SCELSE / Nanyang Technological University, Singapore

Analyzing Community Assembly Processes and Functional Traits in Full-Scale Biological Wastewater Treatment Systems

○Jinjin Yu, City University of Hong Kong, China

Developing the Roadmap towards Exascale Biological Simulations of Microbial Communities

○Denis Taniguchi, Newcastle University, United Kingdom

10:30-12:00 Biofilms and nitrogen cycle-microorganisms

Supported by Kurita Water and Environment Foundation

Chairs: Satoshi Tsuneda, Japan & Sukhwan Yoon, Korea

Engineering a Controllable, Quorum Quenching Biofilm to Mitigate Membrane Biofouling

○Bin Cao, Nanyang Technological University, Singapore

Quorum Sensing Inhibition Reduces Biofilm Formation and Biocorrosion Associated with *Desulfovibrio vulgaris*

○Krishnakumar Sivakumar, King Abdullah University of Science and Technology, Saudi Arabia

SRT Increases with Biofilm Thickness in MBBR Systems

○Jane Fowler, Technical University of Denmark, Denmark

Using Methane to Reduce Multiple Oxidized Contaminants in Membrane Biofilm Reactors

○Mengxiong Wu, The University of Queensland, Australia

The Quest for Specialist N₂O-respiring Organisms

○Michele Laurenzi, Delft University of Technology, The Netherlands

Influence of Rate of Salinity Increase on Nitrifying Biofilms

○Sharada Navada, Norwegian University of Science and Technology, Norway

13:30-15:00 Recently discovered microbial physiologies and Anammox

Chair: Susanne Lackner, Germany & Michele Laurenzi, The Netherlands

Keynote

Towards a Mechanistic Understanding of Comammox *Nitrospira* **Dr. Sebastian Lückner, Radboud University, The Netherlands**

Granule Size Distribution and Microbiome Composition in Anammox Enrichment Bioreactors

○Stefan Wuertz, SCELSE/Nanyang Technological University, Singapore

Oxygen Perturbations Lead to Divergent Gene Expression Patterns of Anammox Consortia under Different Temperature Regimes

○Robert Niederdorfer, EAWAG, Switzerland

Activity, Abundance, and Identification of N₂O-reducing Bacteria Present in Anammox Biomass-Combination of ¹⁵N Tracer and Molecular Analyses

○Toshikazu Suenaga, Tokyo University of Agriculture and Technology, Japan

Extracellular Electron Transfer-dependent Anaerobic Oxidation of Ammonium by Anammox Bacteria

○Dario Rangel Shaw, King Abdullah University of Science and Technology, Saudi Arabia

15:30-16:30 Microbial ecology in anaerobic digestion

Chairs: Khan Munawwar, UAE & Claudia Etchebehere, Uruguay

Syntrophy and Hydrolysis in Methanogenic Reactors Capitalize on Diverse Electron Metabolisms and Metabolic Concessions

○Masaru K. Nobu, AIST, Japan

Omics Integrative Analysis to Improve the Anaerobic Digestion of Wastewater Sludge

○Laëticia Cardona, IRSTEA, France

Detection and Quantification of Viable Microbiome in Anaerobic Sludge Digester using Propidium Monoazide (PMA)-PCR

○Jialing Ni, Tohoku University, Japan

Versatile Substrate Usage in Full-scale Digester Methanogens

○Jeppe Lund Nielsen, Aalborg University, Denmark



19(TUE) Oral Presentation

MEWE 2019 Nov. 17-20
Hiroshima Japan

8:30-10:00 Microbiology of drinking water production and distribution

Chairs: Emmanuelle Prest, The Netherlands & Tung Hsin-Hsin, Taiwan

Keynote

 **Impact of climate change on drinking water distribution systems**
Dr. Isabel Douterelo, The University of Sheffield, United Kingdom

Investigating the Impact of Disinfectant Residual on the Drinking Water Microbiome

○Zihan Dai, University of Glasgow, United Kingdom

Microbial Community Dynamics in a Simulated Direct Potable Reuse Distribution System

○Lauren Kennedy, University of California Berkeley, USA

Influence of Biostability, Materials and Distance on the Biofilm Community in Fullscale Drinking Water Distribution Systems in the Netherlands

○Kimberly Learbuch, KWR Watercycle Research Institute, The Netherlands

Molecular-level Analysis of Biodegradable Organic Matter Supporting Microbial Regrowth in Drinking Water

○Ikuro Kasuga, Vietnam Japan University / The University of Tokyo, Japan

10:30-12:00 Microbial ecology of EBPR systems, PAO and PHA-accumulating bacteria

Chairs: Chua Adeline Seak May, Malaysia & Jane Fowler, Denmark

The Environment Selects: Modeling Intracellular Energy Allocation In EBPR Communities under Dynamic Conditions

○Aljoscha Wahl, Delft University of Technology, The Netherlands

Diversity and Ecophysiology of Novel Polyphosphate Accumulating Organisms in Enriched Cultures

○Miriam Peces, Aalborg University, Denmark

Metabolic Shift in Accumulibacter Clade II Organisms During Enrichment in Aerobic Granular Sludge Reactors Operated under Tropical Conditions

○Samarpita Roy, National University of Singapore, Singapore

Polyhydroxyalkanoates Production from Organic Fraction of Municipal Solid Waste: Microbiome Changes and Link with the Process Parameters

○Simona Crognale, IRSA-CNR, Italy

Examining Long-Term Microbial Population Dynamics at Multiple Scales Using Enrichment Bioreactors as Model Ecosystems

○Elizabeth McDaniel, University of Wisconsin-Madison, USA

Filamentous Bacteria and Granular Sludge: Will They Match?

○Mark van Loosdrecht, Delft University of Technology, The Netherlands



20(WED) Oral Presentation

MEWEO 2019 Nov. 17-20
Hiroshima Japan

8:30-10:00 Antibiotic resistance genes and antimicrobial resistance in water engineering systems

Chairs: Dominic Frigon, Canada & Jianhua Guo, Australia

Keynote



Antibiotics Resistance Genes as Biological Pollutants from WWTPs **Dr. Tong Zhang, The University of Hong Kong, China**

Exploration of the Antibiotic Resistome in a Wastewater Treatment Plant by a Nine-Year Longitudinal Metagenomic Study

○Xiaole Yin, The University of Hong Kong, China

Antibiotic Resistance in Wastewater Treatment Plant Deciphered by Metagenomics Analysis: Germany vs. Namibia

○Shelesh Agrawal, Technische Universität Darmstadt, Germany

The Temporal Co-occurrence Patterns Between Antibiotic Resistance Genes and Virulence Genes in Wastewater Treatment Plant

○Bing Zhang, Tsinghua University, China

Enrichment of Nontuberculous Mycobacteria with Intrinsic Antimicrobial Resistance in Systems with Disinfectant Residual

○Maria Sevillano, Northeastern University, USA

10:30-12:00 Methods for monitoring and assessing microbial communities in water engineering

Chairs: Wen Xianghua, China & Kengo Kubota, Japan

The Long (read) path toward High Quality Metagenome Assembled Genomes

○Rasmus Kirkegaard, Aalborg University, Denmark

Handheld and High-accuracy: a New Approach for Profiling Microbial Communities on the Portable Nanopore Sequencing Platform

○Ryan M. Ziels, University of British Columbia, Canada

A Comparative Assessment of Conventional and Molecular Methods, Including MinION Nanopore Sequencing, for Surveying Water Quality

○Kishor Acharya, Newcastle University, United Kingdom

Development of Microfluidic Compartmentalization Technology for Environmental Antimicrobial Resistance

○Soichiro Tsuda, On-chip Biotechnologies, Japan

Shedding Light on Novel Bacteria in Wastewater Treatment Plants: FISH Probe Design Based on The MiDAS 3.1

16S rRNA Ecosystem-specific Database

○Jannie Munk Kristensen, Aalborg University, Denmark

Flow Cytometry Reveals Key Microbial Community Aspects

○Caitlin Proctor, Purdue University, USA

13:40-15:10 Microbial community dynamics in water engineering applications

Chairs: Jeppe Nielsen, Denmark & Tsukasa Ito, Japan

Nitrospira Dominated the Nitrifying Community in a Low-DO-Anoxic-Oxic Process in the Tropics

○Seow Wah How, University of Malaya, Malaysia

Unravelling the Role of Filamentous Bacteria in Activated Sludge Systems Fed with Industrial Wastewater

○Angela Cabezas, Uruguay Technological University, Uruguay

Determining the Prevalence of Comammox Bacteria in Nitrogen Removal Systems

○Ameet J. Pinto, Northeastern University, USA

Microbial Community Assembly in Two Full Scale Aerobic Basins Containing Identical Starting Populations: Drivers and Implications

○Joseph Weaver, North Carolina State University, USA

Coupling Growth Kinetics Modeling with Machine Learning Reveals Microbial Immigration Impacts and Identifies Key Environmental Parameters in a Biological Wastewater Treatment Process

○Ran Mei, University of Illinois at Urbana-Champaign, USA

A 9-Year Time Series Metagenomic Study: Insights into Microbial Community Dynamics in a Full-scale Activated Sludge System

○Yulin Wang, The University of Hong Kong, China



20(WED) Closing

15:20-16:00

Chair: Futoshi Kurisu, Japan

Poster Award Presentation

Closing remarks