



ISME20
AUCKLAND

20th International Symposium on Microbial Ecology

Auckland, New Zealand

16 - 21 August 2026

Programme





ISME20
AUCKLAND

20th International Symposium
on Microbial Ecology

Scientific Programme

Sunday 16 August



SUNDAY 16 AUGUST 2026

12:00	Registration and Speakers preparation room open	
14:00	Social Programme	Mentor Programme in Plenary Room Theatre Te Paepae
16:00	Opening Ceremony	Opening Ceremony in Plenary Room Theatre Te Paepae
18:00	Social Programme	Welcome Reception in the lobby area of level 5
20:15	Networking Event	Meet the Editors at the Sunset, the rooftop bar of the Sudima Auckland City Hotel

Mentorship Programme

Chairs:

Burak Avci, Aarhus University, Denmark

Pam Engelberts, Queensland University of Technology, Australia



14:00 - 15:45

ROOM TE PAEPAE

The ISME Early Career Scientist Committee (ECSC) has organized a mentorship programme for pre-registered mentees and mentors that connects students and early-career microbial ecologists with established researchers.

The programme begins with an introduction to the ECSC and its conference activities, followed by practical guidance on effective mentoring and on building a successful mentor-mentee relationship. In the second part, participants will join a networking session to meet their pre-assigned mentors and fellow mentees.



The Mentorship Programme is sponsored by the Minderoo Foundation

Opening Ceremony



Chair:

Raquel Peixoto, ISME President

16:00 - 18:00

ROOM TE PAEPAE

16:00	Karakia by the local iwi Ngāti Whātua Orakei
16:05	President's Address – A welcome from ISME Raquel Peixoto, King Abdullah University of Science and Technology, Saudi Arabia
16:35	ISME20 Chair Address – Welcome to ISME20 Mike Taylor, University of Auckland, New Zealand
16:55	Plenary session Chair: Phil Hugenholtz , University of Queensland, Australia The human gut microbiome: variation, diagnostics and modulation Jeroen Raes, KU Leuven and VIB, Belgium



Jeroen Raes

KU Leuven and VIB, Belgium

Jeroen Raes is full professor at KU Leuven since 2013 and VIB group leader since 2009. His group currently consists of 30 scientists, with expertise in bioinformatics, systems biology, clinical research and microbiology. He has a substantial track record in microbiome research and has been pioneering the analysis and integration of meta-omics datasets (metagenomics, metatranscriptomics, metaproteomics, meta-metabolomics) with environmental, clinical, host omics and dietary data. He was involved in the FP7 MetaHIT and NIH Human Microbiome Project (the latter as only European partner), which laid the foundations for the human microbiome field as it is today. Finally, his lab is performing a wide range of disease-related projects in a.o. IBD, diabetes, cancer, IBS and depression and develops novel approaches and tools for microbiome research. Jeroen Raes coordinates the Flemish Gut Flora project, a large-scale microbiome- focused population cohort in Belgium.

Opening Ceremony

Chair:
Raquel Peixoto, ISME President



16:00 - 18:00

ROOM TE PAEPAE

17:40 ***Cultural Performance***
by local iwi of central Tāmaki Makaurau

Welcome Reception



18:00 - 20:00

LOBBY LEVEL 5

We invite all delegates to the Welcome Reception as we celebrate the official opening of the conference. It's a great opportunity to meet fellow delegates, reconnect with colleagues, and enjoy an evening of conversation.



ISME20
AUCKLAND

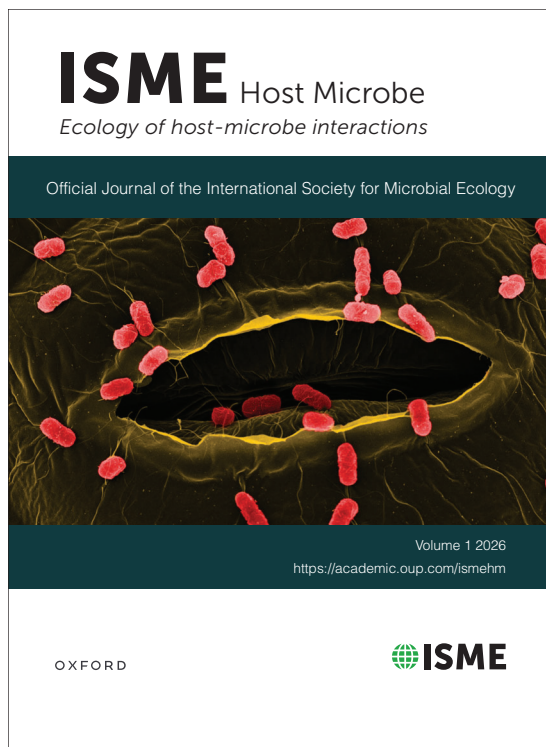
20th International Symposium
on Microbial Ecology

Scientific Programme

Monday 17 August

Monday 17 August 2026									
TIME		TE PAEPAE	503 - 505	515	516	ARIKI HALL 1	301 - 302	303 - 305	TE WHARAU
08:30		Registration and speaker preparation room open							
09:00 - 10:00	Plenary Session	Wanda Markotter, South Africa							
10:00 - 11:00	Poster Session	Poster Session in the Exhibition and Poster Area in Ariki Hall 2 and 3							
11:00 - 13:00	Morning Sessions	Harnessing plant and soil microbiomes for sustainable agriculture	From pollution to resource: microbial solutions for a cleaner future	Tree of Life	Microbial Marvels: advancing microbial literacy for a healthier world	Animal microbiomes	Extremophiles and extreme environments	AI-based tools to predict key microbiome traits	Geo-microbiology: microbial solutions
13:00 - 14:30		Lunch Break							
13:30 - 14:30	Panel Session								AI in scientific publishing – editorial, publisher, author, and early career perspectives
14:30 - 16:30	Afternoon Sessions	Harnessing plant and soil microbiomes for sustainable agriculture	From pollution to resource: microbial solutions for a cleaner future	Tree of Life	Microbial Marvels: advancing microbial literacy for a healthier world	Animal microbiomes	Extremophiles and extreme environments	AI-based tools to predict key microbiome traits	Geo-microbiology: microbial solutions
16:30 - 17:30	Poster Session	Poster Session in the Exhibition and Poster Area in Ariki Hall 2 and 3							
17:30 - 19:00	Round Tables	AI in Microbiome Science: hype or Reality?	Empowering global workforce development in microbiome data analysis and governance	Testing the limits of microbial infallibility and evolution with 'Forever Chemicals'	Microbial inheritance across kingdoms: unifying principle or system-specific process?	Microbiome engineering for climate mitigation: promise, limits, and reality	Release of synthetic or engineered microbial communities. Should it be (more) regulated and if so, how?	Beyond the Black Box: microbiome-driven soil function and restoration	Is unified microbial taxonomy possible in the age of big data?

ISME Host Microbe focuses on host-microbe interactions with particular emphasis on host-associated microbiome studies (from environmental to clinical), when viewed from an ecological perspective. The scope includes interactions and effects of the host on the microbe and the microbe on the host.



ISME Host Microbe will publish articles on:

- Ecological studies of host-microbe interactions
- Ecological studies of host-microbiome interactions
- Cross-kingdom studies within host microbiomes
- Microbiome studies that aim to obtain causal evidence of observed phenomena
- Studies to understand interactions within the host microbiome and the impact on the host
- Effects of antimicrobial agents on host-microbe interactions
- Effects of microbes on hosts, including nutrition.
- Effects of human activities on host-microbe interactions
- Effects of immunity on host-microbe interactions
- Environmental effects on host-microbiome interactions

Plenary session

Chair:

Raquel Peixoto, King Abdullah University for Science and Technology, Saudi Arabia



09:00 - 10:00

ROOM TE PAEPAE

Bridging microbial ecology and One Health to prevent future pandemics

Wanda Markotter, University of Pretoria, South Africa



Wanda Markotter

Director of the Centre for Viral Zoonoses, Faculty of Health Sciences and Director of the Future Africa Platform at University of Pretoria, South Africa

Wanda Markotter is the Interim Director and Research Chair: People, Health, and Places (One Health) at Future Africa, University of Pretoria. She also serves as Director of the Centre for Viral Zoonoses (UP-CVZ) in the Faculty of Health Sciences and holds the DSTI-NRF South African Research Chair in Infectious Diseases of Animals (Zoonoses). Her inter and transdisciplinary research focuses on bat pathogens and predicting and preventing spillover risks. Prof Markotter is Co-Chair of the One Health High-Level Expert Panel (OHHLEP), advising the WHO, WOA, FAO, and UNEP. Prof Markotter is actively involved in several One Health initiatives with a pan-African focus, contributing to the development of integrated health strategies at the interface of human, animal, and environmental health.

Fields of Expertise: One Health, Zoonoses, Disease Ecology, Virology

Poster Session

Meet the Authors
of the **odd-numbered posters** of the following sessions:



10:00 - 11:00

ROOM ARIKI HALL 2 & 3

PS1.01	Harnessing plant and soil microbiomes for sustainable agriculture PS1.01.001 - PS1.01.102
PS1.02	From pollution to resource: microbial solutions for a cleaner future PS1.02.103 - PS1.02.162
PS1.03	Tree of Life PS1.03.163 - PS1.03.175
PS1.04	Microbial Marvels: advancing microbial literacy for a healthier world PS1.04.176 - PS1.04.179
PS1.05	Animal microbiomes PS1.05.180 - PS1.05.272
PS1.06	Extremophiles and extreme environments PS1.06.273 - PS1.06.352
PS1.07	AI-based tools to predict key microbiome traits PS1.07.353 - PS1.07.363
PS1.08	Geomicrobiology: microbial solutions PS1.08.364 - PS1.08.384
PS1.28	Microbial consortia – natural to synthetic PS1.28.385 - PS1.28.428

Note: The first part of the poster numbers indicate the day of the session (viz. 1 for Monday). The second part lists the session number, and the final three-digit part is the poster board number.

The presentations are split over two sessions per day. All odd poster board numbers will be presented in the morning, and all even numbers in the afternoon.

For full listing please see the abstract book or the conference app.

Monday 17 AUGUST

MS01.1 - Harnessing plant and soil microbiomes for sustainable agriculture

Chairs:
Roeland Berendsen, Utrecht University, the Netherlands
Sanjay Swarup, National University of Singapore, Singapore



11:00 - 13:00

ROOM TE PAEPAE

11:00	<i>The extended phenotype of the plant microbiome</i> Roeland Berendsen, Utrecht University, the Netherlands Invited Presentation
11:30	<i>Microbial control of nitrogen cycling across agroecosystems: a functional microbiome approach to inform crop-available nitrogen</i> Christopher Chorpennig, Colorado State University, United States Oral Presentation
11:45	<i>Endophyte technology: a New Zealand agricultural success story</i> Stuart Card, AgResearch Limited, New Zealand Oral Presentation
12:00	<i>Bottom-up ecological mining and biocontrol of the quarantine potato wart disease – the first step on a very long road</i> Wen Chen, Agriculture and Agri-Food Canada, Canada Oral Presentation
12:15	<i>Dominance and natural suppression of bacterial plant pathogens across global soils</i> Min Gao, Western Sydney University, Australia Oral Presentation
12:30	<i>Plant-microbiome signaling and holobiont responses: from discovery to farm trials</i> Sanjay Swarup, National University of Singapore, Singapore Invited Presentation

Monday 17 AUGUST

MS02 - From pollution to resource: microbial solutions for a cleaner future

Chairs:

Gavin Lear, University of Auckland, New Zealand

Korneel Rabaey, Ghent University, Belgium



ISME20
AUCKLAND

11:00 - 13:00

ROOM 503-505

11:00	<i>The 3Rs environmental challenge of microbial electrochemical technologies: Remediation, Recovery, and Reclamation</i> Abraham Esteve Nunez, Universidad de Alcalá, Spain Invited Presentation
11:30	<i>Isolating Polyhydroxybutyrate-co-hydroxyvalerate (PHBV)-plastic degrading microbes from soil using in situ electronic decomposition sensors</i> Andrew Blakney, University of Colorado, Boulder, United States Oral Presentation
11:45	<i>Plastic Daphnia: Visual and structural degradation of plastic films by Daphnia associated microbiota</i> Emma Gouwy, KU Leuven, Belgium Oral Presentation
12:00	<i>Curated PzDE-HMM and multi-omics identify strains and enzymes for synthetic consortia enabling full-chain PVC degradation</i> Feng Ju, Westlake University, China Oral Presentation
12:15	<i>Reassessing microbial plastic degradation with PlasticDB</i> Gavin Lear, University of Auckland, New Zealand Invited Presentation
12:30	<i>The Field-Lab Toggle: assessment and application of environmental microbiomes during bioremediation of contaminant mixtures</i> Shaily Mahendra, University of California, Los Angeles, United States Invited Presentation

Monday 17 AUGUST

MS03 - Tree of Life

Chairs:

Laura Hug, University of Waterloo, Canada

Phil Hugenholtz, University of Queensland, Australia



ISME20
AUCKLAND

11:00 - 13:00

ROOM 515

11:00	<i>Rocking the cradle of life... microbial mats and the rise of complex life</i> Brendan Burns, University of New South Wales, Australia Invited Presentation
11:30	<i>Towards defining genomic signatures of microbial oxygen utilization across the tree of life</i> Fatima Li-Hau, Okinawa Institute of Science & Technology Graduate University, Japan Oral Presentation
11:45	<i>Lignin before land: evidence for an ancient origin of lignin biosynthesis</i> Hau Ching Luk, Nanyang Technological University, Singapore Oral Presentation
12:00	<i>Why are archaea not pathogenic? A hypothesis based on metabolism-habitat covariation</i> Daniel Harrison, University of Auckland, New Zealand Oral Presentation
12:15	<i>Uncovering the cell surface of Asgard archaea</i> Jessie James Malit, ETH Zurich, Switzerland Oral Presentation
12:30	<i>A major bacterial lineage steals RNA to fuel metabolism!?</i> Masaru Nobu, JAMSTEC, Japan Invited Presentation

Monday 17 AUGUST

MS04 - Microbial Marvels: advancing microbial literacy for a healthier world

Chairs:

Rup Lal, University of Delhi, India

Siouxie Wiles, University of Auckland, New Zealand



ISME20
AUCKLAND

11:00 - 13:00

ROOM 516

11:00	<i>From classroom to genome: student-led evolution experiments expose the genetic architecture of Pseudomonas biofilms</i> Vaughn Cooper, University of Pittsburgh, United States Invited Presentation
11:30	<i>'Tiny Biome Tales' and 'Microbiome & Health': advancing microbiome literacy through gamified and open online education</i> Ahmed Abdelfattah, Leibniz Institute of Agricultural Engineering and Bio-economy e.v. ATB, Germany Oral Presentation
11:45	<i>Dual pathways to belonging in microbiology: diverse scientist representation and community-based intergenerational learning in microbiology education</i> Grace Borlee, Colorado State University, United States Oral Presentation
12:00	<i>Promoting microbiology awareness and holistic health: IMiLI and IMiLI-SAC perspectives on microbes, nutrition, lifestyle and society – a five-year journey</i> Rup Lal, University of Delhi, India Invited Presentation
12:30	<i>MicroMates: how can we educate kids without them noticing</i> Eric Capo, Umeå University, Sweden Invited Presentation

Monday 17 AUGUST

MS05 - Animal microbiomes

Chairs:

Graeme Attwood, AgResearch Ltd, New Zealand

Valerie McKenzie, University of Colorado at Boulder, United States



ISME20
AUCKLAND

11:00 - 13:00

ROOM ARIKI HALL 1

11:00	<i>The ruminant microbiome and methane mitigation</i> Graeme Attwood, AgResearch, New Zealand Invited Presentation
11:30	<i>Parabiotic mice reveal a systemic response to vancomycin-mediated microbiome disruption</i> Martin Blaser, Rutgers University, United States Oral Presentation
11:45	<i>Ultra-deep manatee gut microbial atlas uncovers life-cycle dynamics and metabolic adaptations to aquatic herbivory</i> Gabriela Felix Persinoti, Brazilian Center for Research in Energy and Materials (CNPEM), Brazil Oral Presentation
12:00	<i>Global cophylogenetic evidence for heterogeneous co-evolution between termites and their gut protists</i> Wahei Hagiwara, Okinawa Institute of Science and Technology, Japan Oral Presentation
12:15	<i>Loss of microbial functional diversity under captivity may undermine reintroduction success</i> Ashley Dungan, University of Melbourne, Australia Oral Presentation
12:30	<i>Humans among the metazoa: rethinking the microbiome with long reads, rapid sketches, and AI</i> Rob Knight, University of California, San Diego, United States Invited Presentation

Monday 17 AUGUST

MS06.1 - Extremophiles and extreme environments

Chairs:

Don Cowan, University of Pretoria, South Africa

Valeria Souza, National Autonomous University of Mexico (UNAM), Mexico



11:00 - 13:00

ROOM 301-302

11:00	Functional microbiomics of hot desert soils Don Cowan, University of Pretoria, South Africa Invited Presentation
11:30	Are Antarctic soil microorganisms actually psychrophiles? Nicholas Dragone, University of Colorado at Boulder, United States Oral Presentation
11:45	Quantifying the archival fidelity of alpine ice for reconstructing atmospheric microbial communities Marie Labat Saint Vincent, Institut des Geosciences de l'Environnement, CNRS France Oral Presentation
12:00	The selfish hydrogen cycle: temperature-induced hydrogen metabolic reversal in early hyperthermophilic archaea Rui Huang, Shanghai Jiao Tong University, China Oral Presentation
12:15	Life at the edge of breath: aerotrophic survival above 6000 m Tess Hutchinson, Monash University, Australia Oral Presentation
12:30	From the Archean to modern agriculture – deciphering the extremophile logic of Puna high-altitude microbial mats for global food security Maria Eugenia Farias, PUNABIO, Argentina Invited Presentation

Monday 17 AUGUST

MS07 - AI-based tools to predict key microbiome traits

Chairs:

Luis Pedro Coelho, Queensland University of Technology, Australia

Martin Steinegger, Seoul National University, South Korea



11:00 - 13:00

ROOM 303-305

11:00	A metagenomic large language model learns transferable evolutionary structure from environmental metagenomes for multi-scale biological modelling and design William Chow, Basecamp Research, United Kingdom Invited Presentation
11:30	Metagenomic scale structure-aware homology searching with Foldseek-ModernProst Victor Mihaila, Seoul National University, South Korea Oral Presentation
11:45	Pretrained protein language models for Microbial Dark Matter annotation Maude David, Oregon State University, United States Oral Presentation
12:00	Fast and accurate domain assignment of short metagenomic reads using BBERT Omri Finkel, Hewbrew University of Jerusalem, Israel Oral Presentation
12:15	Discovery of antimicrobial toxins in the global microbiome Yiru Jian, Shandong University, China Oral Presentation
12:30	AI for understanding small proteins and peptides from the global microbiome Luis Pedro Coelho, Queensland University of Technology, Australia Invited Presentation

Monday 17 AUGUST

MS08 - Geomicrobiology: microbial solutions



Chairs:

Jill Banfield, University of California, Berkeley, United States

Sean Crowe, University of British Columbia, Canada

11:00 - 13:00

ROOM TE WHARAU

11:00	<i>Biosorption, bioaccumulation and bio-utilization of rare earth elements in the groundwater system of sedimentary rocks</i> Yuki Amano, Japan Atomic Energy Agency, Japan Invited Presentation
11:30	<i>Earth's oldest coal fire fuels industrially-relevant gas-consuming microbes</i> Lucas Barbieri Oliveri, Monash University, Australia Oral Presentation
11:45	<i>Carbonate-hosted ancient DNA links subsurface microbial ecology, geochronology, and carbon cycling</i> Kirsten Küsel, Friedrich Schiller University Jena, Germany Oral Presentation
12:00	<i>Tracking interlinked microbial and geochemical succession over decades in landfilled municipal solid waste</i> Kimber Munford, University of Waterloo, Canada Oral Presentation
12:15	<i>Genome mining culture collections for understudied rare earth element-utilizing micro-organisms</i> Kalle Pettersson, National Resource Institute Finland, Finland Oral Presentation
12:30	<i>ATCG marks the spot: genomic signals of concealed mineral deposits</i> Sean Crowe, University of British Columbia, Canada Invited Presentation

Monday 17 AUGUST

Panel Discussion

AI in scientific publishing - editorial, publisher, author, and early career perspectives



Chairs:

Jillian Petersen, Editor-in-Chief The ISME Journal, Austria

Hauke Schmidt, Editor-in-Chief ISME Communications, the Netherlands

13:30 - 14:30

ROOM TE WHARAU

Description	Artificial intelligence tools are reshaping the process of scientific publishing, as they are in so many other areas. From generating data and analyses, writing manuscripts and preparing figures, to reviewing and typesetting, there is barely a step in the process of scientific publishing where the stamp of AI has not been seen. In this session, we will provide insights into how a range of stakeholders including editors, publishers, authors, and early career researchers are experiencing this shift. Come and share your experiences, hopes, and concerns, and use this chance to ask how ISME's journals are managing this technological revolution.
Speaker	<i>AI and digital product development at OUP</i> Giulia Maggiori, Oxford University Press, United Kingdom
Panel Members	Nichole Broderick, Editor-in-Chief ISME Host Microbe, Johns Hopkins University, United States Luis Pedro Coelho, Queensland University of Technology, Australia Ann Gregory, ISME Early Career Scientist Committee, University of Calgary, Canada Giulia Maggiori, Oxford University Press, United Kingdom

Monday 17 AUGUST

AS01 - Harnessing plant and soil microbiomes for sustainable agriculture

Chairs:

Maggie Wagner, University of Kansas, United States

Luis Gabriel Wall, University of Quilmes, Argentina



ISME20
AUCKLAND

14:30 - 16:30

ROOM TE PAEPAE

14:30	<i>The role of plant immunity in microbe-dependent heterosis</i> Maggie Wagner, University of Kansas, United States Invited Presentation
15:00	<i>Evolving plant-associated microbiomes to modulate flowering time</i> Alejandra Hernandez-Teran, University of California, Irvine, United States Oral Presentation
15:15	<i>Unraveling the transcriptional and epigenetic footprint of the plant-endophyte interaction</i> Nikolaos P. Arapitsas, University of Crete, Greece Short Talk
15:20	<i>Diffusible microbial signals prime plant innate immune receptor organization in distal tissues</i> Johannes Herpell, Max Planck Institute for Plant Breeding Research, Germany Short Talk
15:25	<i>A multi-kingdom functional atlas of wheat microbiome assembly</i> Simon Law, CSIRO, Australia Short Talk
15:30	<i>Domestication simplifies and specializes the quinoa seed microbiome</i> Jiangnan Huang, Zhejiang University, China Short Talk
15:35	<i>Host genetics recruit soil microbe to improve nitrogen stress tolerance in perennial ryegrass</i> Hu Wang, Bioeconomy Science Institute - AgResearch, New Zealand Short Talk
15:40	<i>Microbial metabolites shaping plant phenotypes</i> Sarah Wolf, Max Planck Institute for Plant Breeding Research, Germany Short Talk
15:45	<i>Host genotype dictates divergent assembly rules of the defensive phyllosphere microbiome against powdery mildew in cucumber</i> Minsoo Jeong, Kyungpook National University, South Korea Oral Presentation
16:00	<i>Conserved symbiosis signalling controls root microbiomes in a host-specific manner</i> Anna Martyn, Max Planck Institute for Plant Breeding Research, Germany Oral Presentation
16:15	<i>Harnessing microbiomes for sustainable crop improvement and climate mitigation</i> Naweed Naqvi, Temasek Life Sciences Laboratory, Singapore Oral Presentation

AS02 - From pollution to resource: microbial solutions for a cleaner future

Chairs:

Gavin Lear, University of Auckland, New Zealand

Korneel Rabaey, Ghent University, Belgium



ISME20
AUCKLAND

14:30 - 16:30

ROOM 503-505

14:30	<i>Unlocking microbiome based bioproduction of medium chain fatty acids with in situ extraction</i> Korneel Rabaey, Ghent University, Belgium Invited Presentation
15:00	<i>Uncovering viral-host interactions in a full-scale anaerobic digester microbial community using multi-substrate DNA stable isotope probing</i> Alma Garcia Roche, University of British Columbia, Canada Oral Presentation
15:15	<i>From metagenomes to single cells: defining the virome of CO₂ fixing methanogenic consortia</i> Nicola De Bernardini, University of Padova, Italy Short Talk
15:20	<i>Isolation and characterization of novel methanol-tolerant lipases from phyllosphere microbial communities for biodiesel production</i> Aviv Fainstein, University of Haifa, Israel Short Talk
15:25	<i>Employing gas mixotrophy for circular bioplastic production: converting industrial waste and greenhouse gases into PHB</i> Surbhi Jain, Monash University, Australia Short Talk
15:30	<i>Quantum-enabled subcommunity detection in microbial networks to enhance anaerobic fermentation from wastewater</i> Lily Lee, Imperial College London, United Kingdom Short Talk
15:35	<i>Plastic degradation by enzymes from uncultured deep sea microorganisms</i> Daryl Barth, University of Texas at Austin, United States Short Talk
15:40	<i>Mining anaerobic PFAS degradation bottleneck: metagenomic discovery of candidate difluoroacetate (DFA)-defluorinating enzymes via enzyme-centric structural mimicry</i> Wonsik Nam, Yonsei University, South Korea Short Talk
15:45	<i>Bacterial cellular physiological constraints and adaptive evolution under PFAS degradation and its intermediate toxic conditions</i> Gayeon Jang, Yonsei University, South Korea Oral Presentation
16:00	<i>Recent advances in enzymatic plastic recycling and upcycling</i> Ren Wei, RWTH Aachen, Germany Invited Presentation

Monday 17 AUGUST

AS03 - Tree of Life

Chairs:

Laura Hug, University of Waterloo, Canada

Phil Hugenoltz, University of Queensland, Australia



14:30 - 16:30

ROOM 515

14:30	<i>Genome streamlining and expansion underlie the evolution of an unusual DPANN lineage recovered from oxygen-depleted marine waters</i> Tara Mahendrarajah, Royal Netherlands Institute for Sea Research (NIOZ), the Netherlands Invited Presentation
15:00	<i>Loss of flagellar motility across the bacterial Tree of Life and its link to type VI secretion systems</i> Jamiema Sara Philip, University of New South Wales, Australia Oral Presentation
15:15	<i>Community conservatism is widespread across the microbial tree of life</i> Lukas Malfertheiner, University of Zurich, Switzerland Short Talk
15:20	<i>Estimation of phage species trees using gene tree coalescence</i> Brett Babec, Queensland University of Technology, Australia Short Talk
15:25	<i>Rapidly expanding the Tree of Life with novel MAGs recovered from single-specimen invertebrate microbiomes</i> Alejandro De Santiago, University of Georgia, United States Short Talk
15:30	<i>The origin and evolution of symbiosis between marine sponge and ammonia-oxidizing archaea (AOA)</i> Weizhi Song, Hong Kong University of Science and Technology, Hong Kong SAR China Short Talk
15:35	<i>Impact of hypersalinity on the proteomic profile of Asgard archaea and its symbiotic partners</i> Lucija Rezo, University of New South Wales, Australia Short Talk
15:40	<i>Decoding Earth's biological nitrogen fixation – from evolutionary origins to ecological expansion across environments using genome databases</i> Hong-Wei Pi, National Chung-Hsing University, Taiwan Short Talk
15:45	<i>From genes to genomes: evolutionary history of ammonia-oxidizing archaea</i> Daan Speth, University of Vienna, Austria Oral Presentation
16:00	<i>Reconstructing ancestral genomes to predict ancient phenotypes</i> Gergely Szöllösi, Okinawa Institute of Science and Technology, Japan Invited Presentation

AS04 - Microbial Marvels: advancing microbial literacy for a healthier world

Chairs:

Rup Lal, University of Delhi, India

Siouxie Wiles, University of Auckland, New Zealand



14:30 - 15:30

ROOM 516

14:30	<i>Communicating science and complexity through collaboration and cartoons</i> Siouxie Wiles, University of Auckland, New Zealand Invited Presentation
15:00	<i>Participatory microbiome research: a reproducible microbial education framework</i> Ellen Dow, Lawrence Berkeley National Laboratory, United States Oral Presentation
15:15	<i>From Culture to Culture: Increasing knowledge on traditional fermented food through microbial literacy and capacity building research</i> Wannes van Beeck, University of Antwerp, Belgium Oral Presentation

Monday 17 AUGUST

AS05.1 - Animal microbiomes

Chairs:

Graeme Attwood, AgResearch Ltd, New Zealand

Valerie McKenzie, University of Colorado at Boulder, United States



14:30 - 16:30

ROOM ARIKI HALL 1

14:30	<i>Leveraging microbes to advance animal conservation</i> Valerie McKenzie, University of Colorado, Boulder, United States	Invited Presentation
15:00	<i>Antimicrobial defence as an emergent property of colony-scale chemical organisation</i> Kenya Fernandes, The University of Sydney, Australia	Oral Presentation
15:15	<i>Competitive interactions from nest-associated yeasts may shape <i>Aspergillus</i> spp. abundance and aspergillosis susceptibility of kākāpō</i> Amber Kanis, Auckland University of Technology, New Zealand	Short Talk
15:20	<i>Environmental and species-specific determinants of host-associated bacterial community composition in wild daphnids</i> Aldo Arellano, University of Michigan, United States	Short Talk
15:25	<i>The aftermath of bleaching for current and future coral holobionts</i> Pedro M. Cardoso, KAUST, Saudi Arabia	Short Talk
15:30	<i>Neonicotinoid induced perturbations of the honeybee gut microbiota and probiotic mediated mitigation</i> Kihyuck Choi, Dong-A University, South Korea	Short Talk
15:35	<i>Muribaculaceae appears to be selected for in the faecal and pouch microbiomes of captive koalas</i> Michaela Blyton, University of Queensland, Australia	Short Talk
15:40	<i>Identifying routes of horizontal transmission of the disease-associated, parasitic bacterium, <i>Aquarickettsia rohweri</i>, to the endangered coral <i>Acropora cervicornis</i></i> Sunni Patton, University of California, Santa Barbara, United States	Short Talk
15:45	<i>Exploring the role of microbe taxonomy and function in shaping microbiomes across animal phyla</i> Arno Hagenbeek, Okinawa Institute of Science and Technology, Japan	Oral Presentation
16:00	<i>A story of a frog, a fungus and some bacteria: siderophore mediated colonisation resistance against chytridiomycosis</i> Christos Paschalidis, Université de Strasbourg, France	Oral Presentation
16:15	<i>Metatranscriptomic responses of skin microbiomes in humpback whales (<i>Megaptera novaeangliae</i>) and south American sea lions (<i>Otaria byronia</i>) to environmental conditions in a subantarctic region</i> Aida Murillo, Instituto de Ecología, Universidad Nacional Autónoma de México, México	Oral Presentation

AS06 - Extremophiles and extreme environments

Chairs:

Don Cowan, University of Pretoria, South Africa

Valeria Souza, National Autonomous University of Mexico (UNAM), Mexico



14:30 - 16:30

ROOM 301-302

14:30	<i>Microbial ecology of thermophilic communities in the hot mineral soils of Mt. Erebus, Antarctica</i> Ian McDonald, The University of Waikato, New Zealand	Invited Presentation
15:00	<i>Episodic replication and error-prone polymerases shape evolutionary dynamics in the deep subsurface biosphere</i> Nicolò Ivanovich, Linnaeus University, Sweden	Oral Presentation
15:15	<i>Metabolic flexibility influences nitrifier niche differentiation in geothermal hot springs</i> Paul Battersby, University of Auckland, New Zealand	Short Talk
15:20	<i>Interactions within microbial communities in a supraglacial ecosystem</i> Francesca Pittino, University of Milano-Bicocca, Italy	Short Talk
15:25	<i>Arsenic transformation and detoxification in thermoalkaline biofilm communities</i> Martina L. Du, Montana State University, United States	Short Talk
15:30	<i>Microbial generalists and specialists fulfil unique ecological roles across Antarctic desert soils</i> Ry Holland, Monash University, Australia	Short Talk
15:35	<i>Mobilomes of hot spring microbiomes</i> Toni Galloway, University of Manchester, United Kingdom	Short Talk
15:45	<i>Insertion sequences as drivers of adaptation and gene flow in the deep biosphere</i> Julie Plewka, University of Duisburg-Essen, Germany	Oral Presentation
16:00	<i>Tracing thermophily across Echinamoebida, the most heat-tolerant clade of eukaryotes</i> Beryl Rappaport, Syracuse University, United States	Oral Presentation
16:15	<i>Microbial life sustained by water – rock interactions in billion-year-isolated fracture fluids</i> Shino Suzuki, RIKEN, Japan	Oral Presentation

Monday 17 AUGUST

AS07 - AI-based tools to predict key microbiome traits



Chairs:

Luis Pedro Coelho, Queensland University of Technology, Australia
Martin Steinegger, Seoul National University, South Korea

14:30 - 16:30

ROOM 303-305

14:30	<i>When AI predicts the microbiome, what is it really learning?</i> Robert Edwards, Flinders University, Australia Invited Presentation
15:00	<i>Predicting bacterial optimal growth temperatures using protein structural information</i> Michael Hoffert, University of Colorado, Boulder, United States Oral Presentation
15:15	<i>Highly accurate functional gene classification and exploration of microbiome resources and risks using FunGeneTyper AI and protein language models</i> Ao Dong, Westlake University, China Short Talk
15:20	<i>Antimicrobial resistance prediction using gene copy-number features outperforms SNP-based approaches</i> Limei Lin, University of British Columbia, Canada Short Talk
15:25	<i>Development of machine learning models to predict rumen microbiome contributions to feed efficiency in beef cattle</i> Bruna Fernanda Fistorol, Okinawa Institute of Science and Technology, Japan Short Talk
15:30	<i>An agentic and generative AI workflow for microbial trait prediction from genomes</i> Paramvir Dehal, Lawrence Berkeley National Laboratory, United States Short Talk
15:35	<i>Metabolic-informed neural networks for multi-omics driven flux prediction: from single organisms to microbial communities</i> Francesco Moro, Vrije Universiteit Amsterdam, the Netherlands Short Talk
15:40	<i>Predicting host-association and environmental embeddings in microbial communities using functional and taxonomic profiles</i> Nanda Pradana Ratnasari, Queensland University of Technology, Australia Short Talk
15:45	<i>Agent-driven analysis of 1,831 genomes reveals pathway consolidation into mega-proteins in Omnitrophota</i> Jacob West Roberts, University of California, Berkeley, United States Oral Presentation
16:00	<i>Title to be confirmed</i> Martin Steinegger, Seoul National University, South Korea Invited Presentation

Monday 17 AUGUST

AS08 - Geomicrobiology: microbial solutions



Chairs:

Jill Banfield, University of California, Berkeley, United States
Sean Crowe, University of British Columbia, Canada

14:30 - 16:30

ROOM TE WHARAU

14:30	<i>A new microbial energy metabolism that couples iron(III) oxide respiration to sulfide oxidation</i> Alexander Loy, University of Vienna, Austria Invited Presentation
15:00	<i>Interspecies ecological competition rejuvenates decayed Geobacter electroactive biofilm</i> Yin Ye, Wuyi University, China Oral Presentation
15:15	<i>Reframing acid and metalliferous drainage prediction: incorporating microbial drivers into waste rock assessment</i> Nick Falk, Flinders University, Australia Short Talk
15:20	<i>Rock type controls denitrification rate in groundwater</i> Madison Laing, University of Calgary, Canada Short Talk
15:25	<i>Extensive halogenated organic compound reservoirs and active microbial dehalogenation in Mariana Trench sediments</i> Rulong Liu, Shanghai Ocean University, China Short Talk
15:30	<i>Unearthing microbial communities in UK lower strength sedimentary rocks: A subsurface sampling and characterisation study</i> Jessica Mackie, British Geological Survey, United Kingdom Short Talk
15:35	<i>New Zealand hydrocarbon reservoirs for green hydrogen storage support globally unique microbial communities</i> Kelsey McKenzie, University of Canterbury, New Zealand Short Talk
15:40	<i>Designing value from nature: harnessing the Sargassum holobiont for biomass innovation</i> Katharina Paetz, Alfred Wegener Institute for Polar and Marine Sciences, Germany Short Talk
15:45	<i>Manganese chemolithoautotrophy across terrestrial and marine redox gradients</i> Hang Yu, Peking University, China Oral Presentation
16:00	<i>Putative lanthanide and PQQ-dependent dehydrogenases are found across Eukarya</i> Colin Robinson, University of California, Berkeley, United States Invited Presentation

Monday 17 AUGUST

Poster Session

Meet the Authors
of the even-numbered posters of the following sessions:



16:30 - 17:30

ROOM ARIKI HALL 2 & 3

PS1.01	Harnessing plant and soil microbiomes for sustainable agriculture PS1.01.001 - PS1.01.102
PS1.02	From pollution to resource: microbial solutions for a cleaner future PS1.02.103 - PS1.02.162
PS1.03	Tree of Life PS1.03.163 - PS1.03.175
PS1.04	Microbial Marvels: advancing microbial literacy for a healthier world PS1.04.176 - PS1.04.179
PS1.05	Animal microbiomes PS1.05.180 - PS1.05.272
PS1.06	Extremophiles and extreme environments PS1.06.273 - PS1.06.352
PS1.07	AI-based tools to predict key microbiome traits PS1.07.353 - PS1.07.363
PS1.08	Geomicrobiology: microbial solutions PS1.08.364 - PS1.08.384
PS.1.28	Microbial consortia – natural to synthetic PS1.28.385 - PS1.28.428

Note: The first part of the poster numbers indicate the day of the session (viz. 1 for Monday). The second part lists the session number, and the final three-digit part is the poster board number.

The presentations are split over two sessions per day. All odd poster board numbers will be presented in the morning, and all even numbers in the afternoon.

For full listing please see the abstract book or the conference app.

Monday 17 AUGUST

RT01 - AI in microbiome science: hype or reality?

Chairs:

Emma Bolton and William Chow, Basecamp Research, United Kingdom

Romy Chakraborty, Lawrence Berkeley National Laboratory, United States

Maude M. David, Oregon State University, United States



17:30 - 19:00

ROOM TE PAEPAE

Description	Artificial Intelligence (AI), encompassing machine learning (ML), deep learning (DL), hyperdimensional computing, and large language models (LLMs), is increasingly touted as a transformative tool for microbiome science. Proponents highlight AI's ability to handle high-dimensional, multi-omics data, reveal hidden patterns, and accelerate discovery across environmental monitoring, host-microbe interactions, ecosystem modelling, antimicrobial resistance (AMR) surveillance, and functional candidate identification. AI-based approaches are already showing promise in domains such as precision medicine, where datasets are more standardised and abundant. Yet microbial communities do not behave like simple machines, but rather as complex social networks where functions may change based on context. Such nonlinear systems require large, high-quality datasets to avoid overfitting and spurious conclusions, yet microbiome datasets often suffer from data sparsity, lack of standardisation, compositional rather than absolute quantification, and limited ecological interpretability. Substantial barriers remain: model generalisation across ecosystems, interpretability of black-box approaches, reproducibility, benchmarking standards, and data sovereignty and governance concerns that shape who can access geographically diverse datasets and who benefits from AI-driven discoveries. This roundtable will critically assess which current and near-future AI applications in microbiome science represent genuine progress, and which are inflated by methodological enthusiasm and hype. A key axis of debate will be whether the field should shift focus from 'better models' to 'better measurements'. For instance, prioritising absolute quantification, functional flux data, and responses to perturbations as the foundation for trustworthy AI/ML. Panelists will contrast success stories with cautionary perspectives, before transitioning to open audience dialogue aimed at defining best practices, unmet needs, and collective strategies for responsible AI integration in microbiome science.
Panel Members	Karoline Faust, KU Leuven, Belgium Leo Lahti, University of Turku, Finland Jacob West- Roberts, Tatta Bio, United States Carla Greco, Basecamp Research, United Kingdom Luis Pedro Coelho, Queensland University of Technology, Australia

Monday 17 AUGUST

RT02 - Empowering global workforce development in microbiome data analysis and governance

Chairs:

Ellen Dow, Lawrence Berkeley National Laboratory, United States

Andrew Bissett, CSIRO, Australia

Mesfin Tafesse, Addis Ababa Science and Technology University, Ethiopia



17:30 - 19:00

ROOM 503-505

Description	Microbiome science is an increasingly important global issue, as nations recognize the impacts of human activity on the environment and global health risks of emerging diseases. Enabling and empowering skilled scientists to explore and understand the complexity of their regional environments remains challenging. Local communities generate rich, regionally-relevant datasets and possess strong domain expertise, but are often constrained by limited access to computational power, data storage, and cyberinfrastructure for analysis. In addition, local domain experts may not be fully aware of best practices for metadata collection, dataset publication, and adoption of FAIR (findable, accessible, interoperable, and reusable) data principles. Regional training initiatives and partnerships are critical for strengthening in-country microbiome research, data management capacity, and establishing CARE (collective benefit, authority to control, responsibility, ethics) principles for Indigenous data governance. Establishing regional instructional expertise, resources, facilities, and access to relevant data is non-trivial. Several groups support in-country training, including KBase and National Microbiome Data Collaborative (USA), ELIXIR (Europe), and Australian Microbiome. For example, KBase, NMDC, and Colorado State University's CoSMic provided bioinformatics training at IOSME19 (South Africa) and ISME-Lat 2025 (Mexico). Since then, local hosts continue to offer trainings, using the provided computational resources, at events in Africa and Central America. However, opportunities remain fragmented. In-country efforts continue to face challenges, without a comprehensive understanding of the complexity involved in establishing and sustaining a local microbiome workforce and associated development activities. This roundtable aims to provide a range of stories – highlighting successes/challenges of local training, with the goal of an open discussion on local/regional barriers to community-driven microbiome research and data management training that includes understanding data sovereignty.
Panel Members	Mohamed Hijri, University Mohammed VI Polytechnic (UM6P), Morocco Alejandra Prieto-Davó, Facultad de Química, Sisal, Universidad Nacional Autónoma de México, Mexico Andrew Bissett, CSIRO, Australia Fengping Wang, Shanghai Jiao Tong University, China Luis Gabriel Wall, Centre for Biochemistry and Microbiology of Soils (CBMS) University of Quilmes, Argentina Mesfin Tafesse Gemed, Addis Ababa Science and Technology University, Addis Ababa, Ethiopia Amanda Black, Lincoln University, New Zealand

Monday 17 AUGUST

RT03 - Testing the limits of microbial infallibility and evolution with 'Forever Chemicals'

Chairs:

Serina Robinson, ETH Zurich, Switzerland

David Ackerley, Victoria University of Wellington, New Zealand



17:30 - 19:00

ROOM 515

Description	In 1951, Ernest Gale proposed that 'some organism exists which can... oxidize any substance which is theoretically capable of being oxidized,' now commonly known as the Microbial Infallibility Principle. While microbes have historically evolved to degrade most xenobiotics, per- and polyfluoroalkyl substances (PFAS) pose a terminal challenge to this rule. With multiple strong C-F bonds, PFAS are among the most inert synthetic compounds ever created. Furthermore, perfluorinated compounds exist in a highly oxidized state, making them unfavorable for microbial oxidative attack, while the fluoride ions resulting from C-F bond cleavage are toxic to many microbes. This roundtable will debate whether certain perfluorinated PFAS represent a hard limit for microbial evolution or if a (co-)metabolic niche may be carved out. We will specifically focus on recent breakthroughs regarding PFAS and the human gut microbiota¹⁻³ and examine cutting-edge methodologies used in these studies such as cryogenic focused ion beam time-of-flight secondary ion mass spectrometry (FIB-SIMS) supported by a toolbox of meta-omic techniques. Overall, this session proposes to explore microbial infallibility in the era of 'forever chemicals.' We will further discuss whether natural evolution can address PFAS contamination or if AI-designed enzymes⁴ and synthetic biology are required. In an age of AI-guided protein design, why has there been so little success to degrade perfluorinated compounds with enzymes? By debating the microbial infallibility hypothesis, this session extends beyond current experimental results to draw on concepts from philosophy and microbial evolution, providing a forward-looking perspective on the limits of microbiological adaptation.
Panel Members	PFAS analytics & bacterial PFAS-active enzymes Yaochun Yu, Stanford University, United States Fungal multi-omics and PFAS remediation Shaily Mahendra, University of California, Los Angeles, United States Enzyme evolution for PFAS Nika Sokolova, Eawag, ETH Zürich, Switzerland AI-guided protein design Libusha Kelly, Einstein College of Medicine, NY, United States

Monday 17 AUGUST

RT04 - Microbial inheritance across kingdoms: unifying principle or system-specific process?

Chair:

Ahmed Abdelfattah, Leibniz Institute for Agricultural Engineering and Bioeconomy, Germany



17:30 - 19:00

ROOM 516

Description	Microbial inheritance, defined as repeatable cross-generation transmission of microorganisms that measurably contributes to offspring microbiome assembly beyond shared environment, is increasingly proposed across plants, animals, insects, fungi, and marine hosts. In plants, seed and floral microbiomes challenge the long-standing assumption that microbiomes assemble primarily through environmental acquisition. In other kingdoms, vertical, mixed, and environmentally mediated transmission routes are well documented in some systems yet disputed in others. A central question emerges for microbial ecology: is microbial inheritance a unifying organizing principle across kingdoms, or a system-specific process with limited generality? This roundtable is designed to foster active discussion through explicitly contrasting viewpoints. Panelists will articulate positions on when inheritance is common and functionally meaningful, when it scales to eco-evolutionary processes, when apparent inheritance can be explained by shared environment or methodological variability, and what evidence thresholds should define inheritance across systems. Discussion will compare transmission routes, reproductive bottlenecks, host control mechanisms, life-history strategies, and environmental disruption across kingdoms. The intended outcome is to move beyond binary debates and instead develop (i) tiered evidence criteria for inheritance claims, (ii) a decision framework for study design and interpretation, and (iii) testable predictions indicating when microbial inheritance should be expected to be strong, weak, or transient.
Panel Members	<i>Microbial inheritance as a meaningful organizing principle in plants, with predictable routes and functional consequences</i> Gabriele Berg, TU Graz, Austria <i>Many apparent inheritance patterns can reflect shared environment, delivery mode, diet, or host life history, as well as methodological variability; stronger causal criteria are required</i> Amy Loughman, University of Melbourne, Australia <i>Progress depends on clear definitions and tiered evidence thresholds to ensure inheritance claims are comparable across systems</i> Marie Simonin, INRAE, France <i>Animal-microbial symbiosis</i> Edward Ruby, California Institute of Technology, United States

RT05 - Microbiome engineering for climate mitigation: promise, limits, and reality

Chair:

Lisa Y. Stein, University of Alberta, Canada



17:30 - 19:00

ROOM ARIKI HALL 1

Description	Microbes are major drivers of greenhouse gases (GHGs) across Earth's ecosystems. Technologies aimed at augmenting, stimulating, inhibiting, or replacing components of microbiomes for reducing and mitigating GHGs are being widely pursued, and some technologies are already commercialized. The topic of this roundtable is to present viewpoints on the practicality, limitations, and potentials of microbiome engineering for the reduction of GHGs, mainly methane and nitrous oxide, and how such approaches might be used to slow the rate of global temperature increase and climate change impacts. Topics will include realized technologies that either inhibit or augment microbial GHG metabolism as informed by holistic microbial ecology research, the promise and limitations of using microbes for GHG mitigation, and knowledge gaps that remain for research and creating new approaches for microbial ecology and climate systems modeling.
Panel Members	<i>Managing Methane from Wetlands</i> Kelly Wrighton, Colorado State University, United States <i>Mitigating nitrous oxide emissions from fertilizer use in agriculture soils</i> Christina Hazard, Université Claude Bernard, France <i>Reducing Greenhouse Gas Emissions on Farm</i> Sinead Leahy, New Zealand Ag Emissions Centre, New Zealand <i>Identifying and Evaluating High-Value Targets for Mitigating Methane Release from the Bovine Rumen</i> Spencer Diamond, Innovative Genomics Institute, University of California, Berkeley, United States <i>Inhibitors of methane emissions in rice paddies</i> Hans Carlson, Lawrence Berkeley National Laboratory, United States <i>Mitigating methane from aging landfills</i> Laura Hug, University of Waterloo, Canada Open discussion

Monday 17 AUGUST

Monday 17 AUGUST

RT06 - Release of synthetic or engineered microbial communities. Should it be (more) regulated and if so, how?

Chairs:

Jonathan A. Eisen, University of California, Davis, United States

Gina M. Chaput, University of California, Davis, United States



ISME20
AUCKLAND

17:30 - 19:00

ROOM 301-302

Description	A growing theme of work in microbiology is the use of synthetic microbial communities (a.k.a. SynComs) for both research and applied projects. Such SynComs can contain both 'natural' microbes as well as genetically manipulated microbes. Syncoms are being studied and used for their potential roles in a diversity of areas including basic microbiome science, conservation, agriculture, human and animal medicine, and environmental remediation and manipulation. As many groups hope to, or are already, releasing such communities into the environment, there is growing discussion (and sometimes concern) about how, or whether, such releases should be regulated. While there have been extensive discussions about how genetically engineered microbe release should be regulated, there has been much less discussion regarding if and how to regulate the release of 'natural' microbes. We propose a panel discussion on this topic with a focus on the contrasts of possible risks versus benefits and whether and how such work should be regulated. As microbial ecology increasingly underpins advances in biotechnology and environmental innovation, this topic is particularly relevant to the ISME community.
Panel Members	Maren Friesen, Dept. of Plant Pathology, Washington State University, United States Raquel Peixoto, King Abdullah University of Science and Technology, Saudi Arabia Jillian Petersen, University of Vienna, Austria Sur Herrera Paredes, International Laboratory for Human Genome Research of the National Autonomous University of Mexico, Mexico

RT07 - Beyond the Black Box: microbiome-driven soil function and restoration

Chairs:

Jack Gilbert, University of California, San Diego, United States

Janet Jansson, United States



ISME20
AUCKLAND

17:30 - 19:00

ROOM 303-305

Description	Soil is one of our most fundamental assets, yet its biological engine is under strain. Beyond visible topsoil loss, microbial networks that regulate nutrient cycling, carbon and nitrogen stabilization, soil structure, and ecosystem resilience are increasingly disrupted. In this roundtable, participants will work together to move beyond 'soil as a black box' management toward microbiome-driven soil function and restoration. The discussion will be organized around building a shared, practical Functional Soil Restoration Framework grounded in microbiome processes. We will compare perspectives on which functional indicators are relevant for inclusion in a standardized framework, and which remain too context-dependent for cross-site comparison. We will also discuss candidate measures that capture microbial necromass contributions to stable soil carbon, explore how microbiome activity may relate to water-use efficiency and soil aggregation, and identify practical indicators of nutrient cycling capacity. To keep the conversation outcome-oriented, we will focus on shifting from static and often variable metrics such as Soil Organic Carbon toward function-based indicators that better predict resilience and soil inoculant input-use efficiency. We will also discuss candidate measures for microbial necromass contributions to stable carbon pools, possible links between microbiome activity, water-use efficiency, and soil aggregation, and indicators of nutrient cycling capacity. Finally, the roundtable will address how to carry these indicators into real-world use by embedding them in field-ready study designs and co-developing pilot approaches with land managers to accelerate climate-relevant implementation.
Panel Members	Alexandre Rosado, KAUST, Saudi Arabia Carsten Suhr Jacobsen, Copenhagen University, Denmark Jack Gilbert, University of California, San Diego, United States Janet K. Jansson, Soil Star Chair, AMI, United States Joana Falcao Salles, University of Groningen, Netherlands Kelly Wroughton, Colorado State University, United States Lucy Harper, Applied Microbial International, United Kingdom

Monday 17 AUGUST

Monday 17 AUGUST

RT08 - Is unified microbial taxonomy possible in the age of big data?

Chair:

Marike Palmer, University of Manitoba, Canada



14:30 - 16:30

ROOM TE WHARAU

Description	Taxonomy serves an important purpose: to organize biological information, which is essential for scientific communication and for mapping the biodiversity on our planet. To fulfill these functions while reflecting natural relationships, scientists have agreed that taxonomy should be grounded in evolutionary relationships. After decades of taxonomic transitions, genomes are now considered the best means of inferring these relationships. However, genomic data alone does not guarantee taxonomic consistency. Different analytical approaches and interpretations result in different taxonomies, undermining the organizational purpose of taxonomy. While nomenclature provides a single name for a taxon within a given taxonomic framework, the frameworks themselves vary depending on whom you ask. Viral taxonomists have adopted a pragmatic solution: taxonomic proposals are discussed and approved by community representatives, creating a unified framework serving virologists worldwide. This raises critical questions: Could adopting the viral model improve taxonomy in other microbial domains? Can we establish best practices for taxonomic proposals and implement community-based review systems? Would this restrain taxonomic research or lead to a unified taxonomy that serves its purpose while remaining responsive to new discoveries? This roundtable will address the challenge of shifting focus from individual taxonomic preferences toward uniform criteria that serve the broader scientific community. We will discuss inconsistencies among current taxonomic resources and explore practical pathways forward for microbial taxonomy in the age of large-scale sequence data.
Panel Members	GTDB, MiGA and SeqCode Committee members: Luis-Miguel Rodriguez-R, Aalborg University, Denmark Maria Chuvochina, Aalborg University, Denmark Philip Hugenholtz, The University of Queensland Brisbane, Australia Outside community members: Per Halkjær Nielsen, Aalborg University, Denmark Daan Speth, University of Vienna, Austria Matthew Stott, University of Canterbury, New Zealand Varsha Kale, Aalborg University, Denmark

Monday 17 AUGUST



ISME20
AUCKLAND

20th International Symposium
on Microbial Ecology

Scientific Programme

Tuesday 18 August

Tuesday 18 August 2026									
TIME		TE PAEPAE	503 - 505	515	516	ARIKI HALL 1	301 - 302	303 - 305	TE WHARAU
08:30		Registration and speaker preparation room open							
09:00 - 10:00	Plenary Session	Matthew Stott New Zealand							
10:00 - 11:00	Poster Session	Poster Session and Tea and Coffee Break in the Exhibition and Poster Area in Ariki Hall 2 and 3							
11:00 - 13:00	Morning Sessions	Harnessing plant and soil microbiomes for sustainable agriculture	Drivers and consequences of freshwater microbial community change	Interconnected microbiomes: from farm to fork for One Health	The art and science of microbial persuasion	Anthropogenic impacts and the microbiome	Extremophiles and extreme environments	Computational approaches in microbial ecology	Mechanisms over means: eco-evolutionary dynamics across scales
13:00 - 14:30		Lunch Break							
13:30 - 14:30	Plenary Session	Bird's Eye View Presentation Maureen O'Malley Australia							
14:30 - 16:30	Afternoon Sessions		Drivers and consequences of freshwater microbial community change	Interconnected microbiomes: from farm to fork for One Health	The art and science of microbial persuasion	Anthropogenic impacts and the microbiome	Animal microbiomes	Computational approaches in microbial ecology	Mechanisms over means: eco-evolutionary dynamics across scales
16:30 - 17:30	Poster Session	Poster Session and Tea and Coffee Break in the Exhibition and Poster Area in Ariki Hall 2 and 3							
16:40 - 17:00	Booth Presentation	Oxford Nanopore Technologies Presentation at booth #3 in the Exhibition and Poster Area in Ariki Hall 2 and 3							
19:00 - 01:00	Social Event	ISME Social Gathering in the Viaduct Events Centre							

Plenary Session

Chair:

Ian McDonald, The University of Waikato, New Zealand



09:00 - 10:00

ROOM TE PAEPAE

How did the thermophilic bacterial genus, *Venenivibrio*, become stranded in Aotearoa-New Zealand hot springs?

A plenary lecture dedicated to the late Prof. Craig Cary

Matthew Stott, University of Canterbury, New Zealand



Matthew Stott

Te Kura Pūtaiao Koiora - School of Biological Sciences

Te Whare Wānanga o Waitaha

University of Canterbury, New Zealand

Matthew Stott leads a small research laboratory based in Christchurch, New Zealand that focusses on environmental microbiology and the microbial ecology of extreme, unusual and/or energetically-challenging environments. This work encompasses a wide spectrum of topics including new methods for cultivating rare microorganisms, microbial genomics and function, microbial diversity, and the intersection of indigenous data sovereignty with microbiology, genomics and biotechnology. Much of Matthew's work has centred in New Zealand's Taupo Volcanic Zone which supports a high concentration of hot spring systems and geothermally heated soils. Using this amazing resource, and with the support of Māori landowners, he and his collaborators have been able to undertake a wide variety of projects including isolating variety of new bacterial taxa. More recently, Matthew and his collaborators completed a near national scale assessment of the microbial diversity and drivers of New Zealand's geothermal ecosystems (colloquially known as the 1000 Springs Project).

Field of Expertise: Extremophiles

Tuesday 18 AUGUST

Poster Session

Meet the Authors
of the odd-numbered posters of the following sessions:



10:00 - 11:00

ROOM ARIKI HALL 2 & 3

PS2.09	Drivers and consequences of freshwater microbial community change PS2.09.001 - PS2.09.053
PS2.10	Interconnected microbiomes: from farm to fork for One Health PS2.10.054 - PS2.10.072
PS2.11	The art and science of microbial persuasion PS2.11.073 - PS2.11.081
PS2.12	Anthropogenic impacts and the microbiome PS2.12.082- PS2.12.157
PS2.13	Computational approaches in microbial ecology PS2.13.158 - PS2.13.219
PS2.14	Mechanisms over means: eco-evolutionary dynamics across scales PS2.14.220 - PS2.14.259
PS2.23	Microbiome-based strategies for climate-smart (/resilient) agriculture PS2.23.260 - PS2.23.282
PS2.24	Built environment PS2.24.283 - PS2.24.288
PS2.26	Antimicrobial resistance: a one health perspective PS2.26.289 - PS2.26.354
PS2.27	Breaking Barriers: novel techniques for microbial ecology PS2.27.355 - PS2.27.394
PS2.29	Invisible Allies: The role of microbes in biodiversity conservation PS2.29.395 - PS2.29.414

Note: The first part of the poster numbers indicate the day of the session (viz. 2 for Tuesday). The second part lists the session number, and the final three-digit part is the poster board number.

The presentations are split over two sessions per day. All odd poster board numbers will be presented in the morning, and all even numbers in the afternoon.

For full listing please see the abstract book or the conference app.

MS01.2 - Harnessing plant and soil microbiomes for sustainable agriculture

Chairs:

Roeland Berendsen, Utrecht University, the Netherlands
Luis Gabriel Wall, University of Quilmes, Argentina



11:00 - 13:00

ROOM TE PAEPAE

11:00	<i>Considering the whole-soil fatty acid profile to study plant and soil microbiomes for sustainable agriculture</i> Luis G. Wall, University of Quilmes, Argentina Invited Presentation
11:30	<i>Tracking multi-kingdom interactions in the rhizosphere using metabolomics</i> Lachlan Dow, CSIRO, Australia Oral Presentation
11:45	<i>Contact-dependent growth inhibition (CDI) systems determine nodulation competitiveness in the nitrogen fixing legume symbiont Paraburkholderia phymatum</i> Martinus Hjørungnes, University of Zürich, Switzerland Short Talk
11:50	<i>Host community activity but not always composition explains viral biogeography in bulk and rhizosphere soils over a tomato growing season</i> Lucie Jiraska, University of California, Davis, United States Short Talk
11:55	<i>Taxonomic and functional differentiation of microbial communities in an experimental agricultural cropping system in Copandaro, Mexico, under conventional, integrated, and agroecological management</i> Luciana Raggi, IIES, UNAM, Mexico Short Talk

Tuesday 18 AUGUST

MS01.2- Harnessing plant and soil microbiomes for sustainable agriculture

Chairs:

Roeland Berendsen, Utrecht University, the Netherlands

Luis Gabriel Wall, University of Quilmes, Argentina



ISME20
AUCKLAND

11:00 - 13:00

ROOM TE PAEPAE

12:00	<i>Whole-genome sequencing of Norwegian Soft Rot Pectobacteriaceae for community characterization</i> Rune Haugland Navarsete, Norwegian University of Life Science, Norway Short Talk
12:05	<i>Synergistic microbial interactions and subcellular localizations amplify endophytic nitrogen fixation</i> Sharon Doty, University of Washington, United States Short Talk
12:10	<i>A pathogen-induced shift in microbial community confers disease resistance in maize</i> Ling Xu, China Agricultural University, China Short Talk
12:15	<i>The One Thousand Plant Microbiomes (1KPM) initiative</i> Xiaolin Wang, South China Agricultural University, China Oral Presentation
12:30	<i>Tailoring the plant-soil-microbiome nexus for stress mitigation</i> Shilpi Sharma, Indian Institute of Technology Delhi, India Invited Presentation

Tuesday 18 AUGUST

MS09 - Drivers and consequences of freshwater microbial community change

Chairs:

Silke Langenheder, Uppsala University, Sweden

Trina McMahon, University of Wisconsin-Madison, United States



ISME20
AUCKLAND

11:00 - 13:00

ROOM 503-505

11:00	<i>Genome streamlining and metabolic flexibility distinguish a group of toxic and non-toxic cyanobacteria that co-occur in proliferating benthic mats</i> Kim Handley, University of Auckland, New Zealand Invited Presentation
11:30	<i>Rising water temperature amplifies seasonal divergence between microplastic- and natural particle-associated microbiomes in urban rivers</i> Yingyu Bao, City University of Hong Kong, Hong Kong SAR China Oral Presentation
11:45	<i>Biogeographical patterns in river viral communities across North American watersheds</i> Mikayla Borton, Colorado State University, United States Oral Presentation
12:00	<i>Polinton-like viruses of cryptophytes as modulators of the freshwater spring bloom</i> Andrea Cicio, Institute of Hydrobiology, Biology Centre CAS, Czechia Oral Presentation
12:15	<i>Biodiversity and phylogenetic structure make microbial invasion in freshwater biofilms predictable</i> Uli Klümper, TU Dresden, Germany Oral Presentation
12:30	<i>Global environmental change effects on the assembly and stability of freshwater microbial communities</i> Silke Langenheder, Uppsala University, Sweden Invited Presentation

Tuesday 18 AUGUST

MS10 - Interconnected microbiomes: from farm to fork for One Health

Chairs:

Gabriele Berg, Graz University of Technology, Austria

Marie Simonin, INRAE - IRHS, France



ISME20
AUCKLAND

11:00 - 13:00

ROOM 515

11:00	<i>The central importance of the interconnected plant microbiome for understanding One Health</i> Gabriele Berg, Graz University of Technology, Austria Invited Presentation
11:30	<i>The 'Necrovirome': understanding the role of wild animal carcasses in pathogen transmission and ecosystem health</i> Rebecca Grimwood, CSIRO, Australia Oral Presentation
11:45	<i>Seasonality in the phyllosphere microbiota of lettuce and potential transfer to the human gut</i> Su-A In, Chungnam National University, South Korea Oral Presentation
12:00	<i>Influence of agricultural intensification on microbial communities, resistomes, and mobilomes across 5000 years of Finnish agricultural history</i> Minna Maunula, University of Helsinki, Finland Oral Presentation
12:15	<i>Environmental surveillance and metagenomic characterization of livestock-wildlife shared environments throughout Texas, USA</i> Kirsten Zwally, Texas A&M University, United States Oral Presentation
12:30	<i>Clinical trials of New Zealand foods for gut health – microbial manipulation as medicine?</i> Richard Gearry, University of Otago, New Zealand Invited Presentation

Tuesday 18 AUGUST

MS11 - The art and science of microbial persuasion

Chairs:

Paul Carini, University of Arizona, United States

Fengping Wang, Shanghai JiaoTong University, China



ISME20
AUCKLAND

11:00 - 13:00

ROOM 516

11:00	<i>Cultivation by design for accessing uncultured microbial lineages</i> Paul Carini, University of Arizona, United States Invited Presentation
11:30	<i>Cultivation, genomics, and giant viruses of a ubiquitous and heterotrophic freshwater cryptomonad</i> Rohit Ghai, Biology Centre CAS, Institute of Hydrobiology, Czechia Oral Presentation
11:45	<i>A high-density Microdroplet platform to access the uncultured majority</i> Yoshiteru Aoi, Hiroshima University, Japan Oral Presentation
12:00	<i>Transcriptomic profiling of Prevotella melaninogenica reveals a scalable genetic strategy for survival across oxygen gradients of the human respiratory tract</i> Claire Albright, University of Michigan, United States Oral Presentation
12:15	<i>Integrated high-throughput cultivation and genomics refine the understanding of seasonal bacterial community dynamics in Garorim Bay</i> Yeonjung Lim, Inha University, South Korea Oral Presentation
12:30	<i>Gut microbiome strain resources: cultivation, biobanking, and function</i> Shuang-Jiang Liu, Institute of Microbiology, Chinese Academy of Sciences, China Invited Presentation

Tuesday 18 AUGUST

MS12 - Anthropogenic impacts and the microbiome



ISME20
AUCKLAND

Chairs:

Chioma Blaise Chikere, University of Port Harcourt, Nigeria

Lisa Stein, University of Alberta, Canada

11:00 - 13:00

ROOM ARIKI HALL 1

11:00	<i>Omics signatures as biomarkers of soil functional recovery post-bioremediation</i> Chioma Blaise Chikere, University of Port Harcourt, Nigeria Invited Presentation
11:30	<i>Cumulative human pressures from prehuman to modern eras restructure coastal microbial and planktonic communities in Aotearoa New Zealand</i> Laura Biessy, Cawthron Institute, New Zealand Oral Presentation
11:45	<i>Warming exacerbates fungal pathogenicity to drive physiological collapse and microbiome reorganization in octocorals</i> Rodrigo Costa, University of Lisbon, Instituto Superior Técnico, Portugal Oral Presentation
12:00	<i>Rapid de novo assembly of animal-microbe biofilter following seabed methane leakage</i> Longhui Deng, Shanghai Jiao Tong University, China Oral Presentation
12:15	<i>A national baseline for methane sink habitats and methanotroph diversity</i> Kalinka Knudsen, Aalborg University, Denmark Oral Presentation
12:30	<i>The atmosphere: a transport medium or an active microbial ecosystem?</i> Rachael Lappan, Monash University, Australia Invited Presentation

Tuesday 18 AUGUST

MS06.2 - Extremophiles and extreme environments



ISME20
AUCKLAND

Chairs:

Don Cowan, University of Pretoria, South Africa

Valeria Souza, Universidad Nacional Autonoma de México, Mexico

11:00 - 12:00

ROOM 301-302

11:00	<i>Microbial life in the end of the world, the surface microbiome of several hosts in the Magellan region exhibits a complex landscape of extreme conditions</i> Valeria Souza, Universidad Nacional Autonoma de México, Mexico Invited Presentation
11:30	<i>Active nitrogen cycling in a subsurface serpentinizing system</i> Phyllis Lam, University of Southampton, United Kingdom Short Talk
11:35	<i>Microbial biogeography in hydrothermal ecosystems is driven by tectonic and geologic differences</i> Daniel Colman, Montana State University, United States Short Talk
11:40	<i>Characterisation of Asgard archaeal stress responses in the context of ancient environmental conditions</i> Maria-Calliope Syrmalis, University of New South Wales, Sydney, Australia Short Talk
11:45	<i>Aeonophiles: a time-loving class of extremophiles</i> Andrew Steen, University of Southern Californiay, United States Oral Presentation

Tuesday 18 AUGUST

MS13 - Computational approaches in microbial ecology



Chairs:

Ferdinand Hellweger, TU Berlin, Germany

Xochitl Morgan, Harvard TH Chan School of Public Health, United States

ISME20
AUCKLAND

11:00 - 13:00

ROOM 303-305

11:00	<i>Genomic constraints shape the evolution of alternative routes to drug resistance in prokaryotes</i> Lucy Dillon, Queens University Belfast, United Kingdom Invited Presentation
11:30	<i>Microbial functional role prediction: an activity-based, context-aware mechanistic approach to microbial characterisation</i> Alexandre Areias Castro, Queensland University of Technology, Australia Oral Presentation
11:45	<i>Population-level metabolic variability predicts persister prevalence and survival time</i> Martin Wu, University of Virginia, United States Oral Presentation
12:00	<i>MGCalibrator - Estimating absolute abundances and uncertainties from metagenomes without spike-ins or additional lab measurements</i> Nimrod de Wit, Centre for Infectious Disease Control, RIVM, the Netherlands Oral Presentation
12:15	<i>Combining protein language models with different architectures expands protein family annotation 14.2-fold across 16 million open reading frames from 3,802 environmental metagenomes</i> Breno Livio Silva de Almeida, University of São Paulo, Brazil Oral Presentation
12:30	<i>Host-microbe biology across scales: from strain-level host specificity to multi-omic disease signatures in companion animals</i> Xochitl Morgan, Harvard TH Chan School of Public Health, United States Invited Presentation

Tuesday 18 AUGUST

MS14 - Mechanisms over means: eco-evolutionary dynamics across scales



Chairs:

Ellen Decaestecker, KU Leuven, Belgium

Paul Rainey, MPI for Evolutionary Biology, Germany

ISME20
AUCKLAND

11:00 - 13:00

ROOM TE WHARAU

11:00	<i>Experimental evolution suggests energetics, not redundancy, drives gene loss in intracellular bacteria</i> Samantha Arras, University of Auckland, New Zealand Invited Presentation
11:30	<i>Context-dependent selection under warming: contrasting eco-evolutionary dynamics in laboratory and field populations</i> Alexander Chase, Southern Methodist University, United States Oral Presentation
11:45	<i>Antimicrobial resistance promotes species coexistence during community assembly</i> Shane Hogle, University of Turku, Finland Oral Presentation
12:00	<i>Plant-like growth and resource transport in a multicellular cyanobacterium</i> David Lea-Smith, University of East-Anglia, United Kingdom Oral Presentation
12:15	<i>Genomic architecture and evolutionary assembly of carbohydrate utilization clusters across bacteria</i> Stefany Moreno, Massachusetts Institute of Technology, United States Oral Presentation
12:30	<i>How (bacterial) life got moving</i> Matthew Baker, University of New South Wales, Sydney, Australia Invited Presentation

Tuesday 18 AUGUST

Plenary Session - Bird's Eye View Presentation

Chair:

Mike Taylor, University of Auckland, New Zealand



13:30 - 14:30

ROOM TE PAEPAE

Ecology versus medicine in microbiome research

Maureen O'Malley, University of Sydney, Australia



Maureen O'Malley
University of Sydney, Australia

Maureen O'Malley is a philosopher of biology who focuses on the amazing philosophical issues in microbiology, especially microbial ecology and evolution. She has a wide range of publications that look into philosophical issues in microbiology, including a book called Philosophy of Microbiology. She is just about to publish a new book on Philosophical Issues in Microbiome Research.

Field of Expertise: Philosophy of microbiology

AS09 - Drivers and consequences of freshwater microbial community change

Chairs:

Silke Langenheder, Uppsala University, Sweden

Trina McMahon, University of Wisconsin-Madison, United States



14:30 - 16:30

ROOM 503-505

14:30	<i>Ecogenomic dynamics of freshwater lake bacteria over two decades</i> Trina McMahon, University of Wisconsin-Madison, United States Invited Presentation
15:00	<i>Declining functional redundancy along lake eutrophication gradients</i> John Pearman, Cawthron Institute, New Zealand Oral Presentation
15:15	<i>Changes in the microdiversity of microbial communities in stressor-impacted river sediments</i> Cristina Liliana Moraru, Environmental Metagenomics, Research Center One Health Ruhr of the University Alliance Ruhr, Germany Short Talk
15:20	<i>You are what you eat: carbon catabolic preferences of prokaryotic heterotrophs reflect physiological, genomic and proteomic traits</i> Hans Carlson, Lawrence Berkeley National Laboratory, United States Short Talk
15:25	<i>Anthropogenic activities shape fluvial viral ecology at a continental scale</i> Anyi Hu, Xiamen University, China Short Talk
15:30	<i>Stable micropollutant removal despite shifting communities: microbial succession under repeated exposure</i> Dandan Izabel-Shen, Helmholtz Institute for Functional Marine Biodiversity at the University of Oldenburg (HIFMB), Germany Short Talk
15:35	<i>Stability and resilience of microbial communities in groundwater</i> Gamaliel Lysander Cabria, University of Calgary, Canada Short Talk
15:40	<i>Revealing cosmopolitan giant viruses across distances and depths in freshwater lakes</i> Liwen Zhang, Kyoto University, Japan Short Talk
15:45	<i>Freshwater microbial community diversity and function respond differently to multiple stressors across different environmental contexts</i> Ziggy Marzinelli, The University of Sydney, Australia Oral Presentation
16:00	<i>Capturing microbial eco-evolutionary dynamics in deep lakes</i> Yusuke Okazaki, Kyoto University, Japan Invited Presentation

Tuesday 18 AUGUST

Tuesday 18 AUGUST

AS10 - Interconnected microbiomes: from farm to fork for One Health

Chairs:

Gabriele Berg, Graz University of Technology, Austria

Marie Simonin, INRAE - IRHS, France



14:30 - 16:30

ROOM 515

14:30	<i>Interconnected seed microbiomes across generations and environments: tracking microbial fluxes in 50 crop species</i> Marie Simonin, INRAE - IRHS, France Invited Presentation
15:00	<i>Successional restructuring and ecological interactions within the microbiome of Atlantic Nori (Porphyra spp.) in Integrated Multitrophic Aquaculture</i> André C. Pereira, Institute for Bioengineering and Biosciences- Instituto Superior Técnico, Portugal Oral Presentation
15:15	<i>Microbial dynamics of poi, a traditional Hawaiian fermented food</i> Andrea Jani, University of Hawaii, United States Short Talk
15:20	<i>Flower-to-fruit transmission of pollinator bacteria does not modify blueberry floral volatiles and fruit quality traits</i> Aiko Lignon, Lincoln University, New Zealand Short Talk
15:25	<i>Bio-based fertilizers shape soil microbiome, resistome and mobilome with carbon-linked influences on metabolism of antibiotic-producing Streptomyces</i> Taru-Marja Mäkinen, University of Helsinki, Finland Short Talk
15:30	<i>Microbial community dynamics under elevated organic matter condition in aquaculture setting</i> Nhat Ton Nguyen, Swedish University of Agricultural Sciences, Sweden Short Talk
15:35	<i>Studying food chain microbiomes to reduce food spoilage and waste</i> Laura Nolan, SCELSE, Nanyang Technological University, Singapore Short Talk
15:40	<i>Biotoxin profile of ready-to-eat foods vended in Lagos, Nigeria</i> Oluwadamilola Makinde, North West University, South Africa Short Talk
15:45	<i>Fermented food virome is diverse, abundant, and transmitted to the human gut</i> Ji-Woo Park, Chungnam National University, South Korea Oral Presentation
16:00	<i>Paleogenomics and the future of lost microbial genomes</i> Christina Warinner, Harvard University and Max Planck Institute for Evolutionary Anthropology, United States and Germany Invited Presentation

Tuesday 18 AUGUST

AS11 - The art and science of microbial persuasion

Chairs:

Paul Carini, University of Arizona, United States

Fengping Wang, Shanghai JiaoTong University, China



14:30 - 16:30

ROOM 516

14:30	<i>Why abundance doesn't mean cultivable: lessons from SAR11</i> Cameron Thrash, University of Southern California, United States Invited Presentation
15:00	<i>The Eremiobacteria: obstacles in cultivation of this oligotrophic Antarctic genus</i> Nathali Machado de Lima, University of New South Wales, Australia Oral Presentation
15:15	<i>A close archaeal relative of eukaryotes with internal membranes</i> Fraser MacLeod, MRC Laboratory of Molecular Biology, United Kingdom Oral Presentation
15:30	<i>Revisiting solid media: growth-inhibitory factors in common gelling agents limit colony formation of fastidious environmental microbes, and their removal enables cultivation</i> Zhiwei Peng, Hiroshima University, Japan Oral Presentation
15:45	<i>The dichotomy of freshwater oligotrophs and copiotrophs revisited</i> Michaela Salcher, Biology Centre CAS, Institute of Hydrobiology, Czechia Oral Presentation
16:00	<i>Decoding Bathyarchaeia's metabolic versatility through targeted enrichment and its implications for deep biosphere carbon cycling</i> Fengping Wang, Shanghai JiaoTong University, China Invited Presentation

Tuesday 18 AUGUST

AS12 - Anthropogenic impacts and the microbiome

Chairs:

Chioma Blaise Chikere, University of Port Harcourt

Lisa Stein, University of Alberta, Canada



14:30 - 16:30

ROOM ARIKI HALL 1

14:30	<i>Urbanization shapes the fluorochemical biotransformation potential of the gut microbiota from diverse human cohorts</i> Serina Robinson, ETH Zurich, Eawag, Switzerland	Invited Presentation
15:00	<i>Declining metabolic flexibility and phenotypic heterogeneity drive functional convergence in postglacial microbial succession</i> Scott Sugden, McGill University, Canada	Oral Presentation
15:15	<i>Trait-based metagenomic insights into cyanobacterial blooms in a hypersaline coastal lagoon undergoing eutrophication</i> Isabel Ferrera, Spanish Institute of Oceanography, Spain	Short Talk
15:20	<i>Climate-driven drying restructures interaction networks and metabolic strategies in Antarctic moss microbiomes</i> Zachary Galvani, Monash University, Australia	Short Talk
15:25	<i>Metal-driven ecological selection shapes airborne microbial communities in an industrial coastal environment</i> Nonsikelo Precious Hlongwa, Stellenbosch University, South Africa	Short Talk
15:30	<i>Microbial degradation processes of biodegradable plastics in marine environments</i> Shun'ichi Ishii, JAMSTEC, Japan	Short Talk
15:35	<i>Belowground consequences of human land management: microbiome function in regenerative vs. conventional tillage</i> Laura Mason, Colorado State University, United States	Short Talk
15:40	<i>Lessons from the equator: a window on the future of vibriosis in a warming Earth</i> Yann Felix Boucher, National University of Singapore, Singapore	Short Talk
15:45	<i>Supporting coral recovery: The effects of molecular hydrogen on Pocillopora favosa and its microbiome following an extreme marine heat wave in the Central Red Sea</i> Malte Ostendarp, University of Bremen, Germany	Oral Presentation
16:00	<i>Mitigation of greenhouse gas emissions by inhibiting nitrification in agroecosystems</i> Lisa Stein, University of Alberta, Canada	Invited Presentation

Tuesday 18 AUGUST

AS05.2 - Animal microbiomes

Chairs:

Graeme Attwood, AgResearch Ltd, New Zealand

Valerie McKenzie, University of Colorado at Boulder, United States



14:30 - 16:30

ROOM 301-302

14:30	<i>Ecological principles governing the rumen microbiome and its relationship with the host</i> Ithzak Mizrahi, Ben-Gurion University of the Negev, Israel	Invited Presentation
15:00	<i>Managing the microbiome: how polymicrobial interactions influence fly microbiome composition and host phenotypes</i> Nichole Broderick, Johns Hopkins University, United States	Oral Presentation
15:15	<i>Global-scale single mosquito virome analysis reveals increased viral diversity in warmer climates</i> Lander De Coninck, KU Leuven, Belgium	Short Talk
15:20	<i>Bacteriophages may enhance epidermal wound healing in sharks</i> Ryan Hesse, Flinders University, Australia	Short Talk
15:25	<i>Developing genetic tools for predominant rumen bacteria</i> Ahmed Hetta, University of Illinois Urbana Champaign United States	Short Talk
15:30	<i>Influence of season on the gut microbiota of tuatara, the sole extant Rhynchocephalian reptile</i> Carmen Hoffbeck, Auckland University of Technology, New Zealand	Short Talk
15:35	<i>Spatial organization of the primate gut microbiome across the gastrointestinal tract</i> Shuwen Hou, The University of Hong Kong, Hong Kong SAR China	Short Talk
15:40	<i>Microbial diversity and functional redundancy in sponge holobionts from an underexplored subterranean marine ecosystem</i> Alejandra Prieto-Davó, Universidad Nacional Autónoma de México, Mexico	Short Talk
15:45	<i>Milk molecular architecture constrains gut microbiome successional tempo and trajectory in megaherbivores</i> Celeste Allaband, University of California, San Diego, United States	Oral Presentation
16:00	<i>Foraging ecology drives viral community structure in New Zealand's aquatic birds</i> Stephanie Waller, University of Otago, New Zealand	Oral Presentation
16:15	<i>Temporal metagenomics of population decline in Swedish brown bears</i> Annie West, The University of Edinburgh, United Kingdom	Oral Presentation

Tuesday 18 AUGUST

AS13 - Computational approaches in microbial ecology



Chairs:

Ferdinand Hellweger, TU Berlin, Germany

Xochitl Morgan, Harvard TH Chan School of Public Health, United States

ISME20
AUCKLAND

14:30 - 16:30

ROOM 303-305

14:30	<i>Enter AI! Exit mechanistic modeling? Inference and prediction of aquatic microbial ecology</i> Ferdinand Hellweger, TU Berlin, Germany Invited Presentation
15:00	<i>Bridging microbial genomics and geochemical transport to predict groundwater bioremediation</i> Jizhong Zhou, University of Oklahoma, United States Oral Presentation
15:15	<i>Baktfold: ultra-sensitive structure-informed functional annotation across the microbial tree of life</i> George Bouras, Adelaide University, Australia Short Talk
15:20	<i>Mapping the known prokaryotic universe into objective compositional space</i> Craig Herbold, University of Canterbury, New Zealand Short Talk
15:25	<i>Early warning signal detection in multi-modal microbiome data</i> Leo Lahti, University of Turku, Finland Short Talk
15:30	<i>Flow cytometric fingerprints as emergent signatures of hydrochemically driven dormancy dynamics in groundwater microbial communities</i> Tae Kwon Lee, Yonsei University, South Korea Short Talk
15:35	<i>Genome-resolved insights into viral ecology within microbial communities using Phables</i> Vijini Mallawaarachchi, Flinders University, Australia Short Talk
15:40	<i>Stability and predictability of species-rich microbial community dynamics under fluctuating environments</i> Genta Shima, Kyoto University, Japan Short Talk
15:45	<i>Bayesian inference captures metabolite-bacteria interactions in a microbial community</i> Jack Jansma, Stellenbosch University, South Africa Oral Presentation
16:00	<i>Revisiting neutrality in microbial communities: the role of observational resolution in ecological inference</i> Dana Ofiteru, Newcastle University, United Kingdom Invited Presentation

Tuesday 18 AUGUST

AS14 - Mechanisms over means: eco-evolutionary dynamics across scales



Chairs:

Ellen Decaestecker, KU Leuven, Belgium

Paul Rainey, MPI for Evolutionary Biology, Germany

ISME20
AUCKLAND

14:30 - 16:30

ROOM TE WHARAU

14:30	<i>Hierarchical eco-evo dynamics mediated by the gut microbiome</i> Ellen Decaestecker, KU Leuven, Belgium Invited Presentation
15:00	<i>Cell motility enhances metabolic coupling in spatially structured microbial communities</i> Miaoxiao Wang, University of Electronic Science and Technology of China, China Oral Presentation
15:15	<i>Commensal cross-feeding interactions constrain species' adaptive evolution</i> Zahraa Al-Tameemi, University of California, Irvine, United States Short Talk
15:20	<i>Microbes on the move: how behavioural interactions shape the transmission of animal microbiomes</i> Maria Elena Martino, University of Padova, Italy Short Talk
15:25	<i>Linking diversity and evolution of host-virus interactions to soil biogeochemistry process rates</i> Graeme Nicol, University of Lyon, France Short Talk
15:30	<i>The secret lives of microbial eukaryotes</i> Elizabeth Ostrowski, University of Washington Bothell, United States Short Talk
15:35	<i>Mapping the human gut microbiota's competitive-cooperative web via high-throughput interaction profiling</i> Joshua Simcock, VIB-KU Leuven, Belgium Short Talk
15:40	<i>What determines the mode of gene regulation in bacteria?</i> Xue-Xian Zhang, University of Auckland, New Zealand Short Talk
15:45	<i>Viruses as diel drivers in a phototrophic microbial mat</i> Louise (Roo) Weed, University of Chicago, United States Oral Presentation
16:00	<i>Evolution of heredity and the emergence of individuality</i> Paul Rainey, MPI for Evolutionary Biology, Germany Invited Presentation

Tuesday 18 AUGUST

Poster Session

Meet the Authors
of the **even-numbered posters** of the following sessions:



16:30 - 17:30

ROOM ARIKI HALL 2 & 3

PS2.09	Drivers and consequences of freshwater microbial community change PS2.09.001 - PS2.09.053
PS2.10	Interconnected microbiomes: from farm to fork for One health PS2.10.054 - PS2.10.072
PS2.11	The art and science of microbial persuasion PS2.11.073 - PS2.11.081
PS2.12	Anthropogenic impacts and the microbiome PS2.12.082- PS2.12.157
PS2.13	Computational approaches in microbial ecology PS2.13.158 - PS2.13.219
PS2.14	Mechanisms over means: eco-evolutionary dynamics across scales PS2.14.220 - PS2.14.259
PS2.23	Microbiome-based strategies for climate-smart (/resilient) agriculture PS2.23.260 - PS2.23.282
PS2.24	Built environment PS2.24.283 - PS2.24.288
PS2.26	Antimicrobial resistance: a one health perspective PS2.26.289 - PS2.26.354
PS2.27	Breaking Barriers: novel techniques for microbial ecology PS2.27.355 - PS2.27.394
PS2.29	Invisible Allies: the role of microbes in biodiversity conservation PS2.29.395 - PS2.29.414

Note: The first part of the poster numbers indicate the day of the session (viz. 2 for Tuesday). The second part lists the session number, and the final three-digit part is the poster board number.

The presentations are split over two sessions per day. All odd poster board numbers will be presented in the morning, and all even numbers in the afternoon.

For full listing please see the abstract book or the conference app.

Social and Networking Event

ISME Social Gathering



19:00 - 01:00

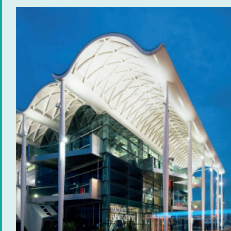
VIADUCT EVENTS CENTRE

Join us at the Viaduct Events Centre for an amazing social event!

Tuesday 20 August

19.00 - 01.00

Tickets included in registration - pre-registration required



Viaduct Events Centre
171 Halsey Street
Auckland CBD 1010

The Viaduct Events Centre is located in Wynyard Quarter of Auckland, in the extended harbour area, near to multiple bars, cafés and restaurant. It is about a 20 minute walk from the New Zealand International Convention Centre.

The doors open at 7pm, and a buffet with 6 different stations will be ready for you.

Three drinks (beer, wine, juice and soft drinks) are included in your ticket.

The Viaduct Events Centre has two levels; a ground level, where a DJ and band will be playing, and a small upper level where you can relax and talk to your fellow delegates.

Please note you will have to bring your badge, as this is your ticket.

Tuesday 18 AUGUST



ISME20
AUCKLAND

20th International Symposium
on Microbial Ecology

Scientific Programme

Thursday 20 August

Thursday 20 August 2026									
TIME		TE PAEPAE	503 - 505	515	516	ARIKI HALL 1	301 - 302	303 - 305	TE WHARAU
08:30		Registration and speaker preparation room open							
09:00 -10:00	Plenary Session	Winogradsky Award Presentation Noah Fierer United States							
10:00 - 11:00	Poster Session	Poster Session and Tea and Coffee Break in the Exhibition and Poster Area in Ariki Hall 2 and 3							
11:00 - 13:00	Morning Sessions	Biogeochemical cycles and greenhouse gas dynamics	Microbial symbioses: it’s mutual – or not	Theoretical microbial ecology		Human Microbiome: from theory to practice	Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes	Microbial frontiers beneath our feet: unravelling soil ecosystem complexity	Microbial atlases and biogeography
13:00 - 14:30		Lunch Break							
13:30 - 14:30	Panel discussion		Microbes without borders – A global microbial coalition for climate action						When funding shapes inclusion: DEI policy shifts and their global consequences
14:30 - 16:30	Afternoon Sessions	Biogeochemical cycles and greenhouse gas dynamics	Microbial symbioses: it’s mutual – or not	Theoretical microbial ecology	Indigenous Knowledge: solutions for global environmental challenges	Human Microbiome: from theory to practice	Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes	Microbial frontiers beneath our feet: unravelling soil ecosystem complexity	Microbial atlases and biogeography
16:30 - 17:30	Poster Session	Poster Session in the Exhibition and Poster Area in Ariki Hall 2 and 3							
17:30 - 18:30	Plenary Session	Tiedje Award Presentation Janet Jansson United States							
18.30 - 19.30	Social Event	Award Reception in the Exhibition and Poster Area in Ariki Hall 2 and 3							

Plenary Session

Chair:

Joana Falcao Salles, University of Groningen, the Netherlands



09:00 - 10:00

ROOM TE PAEPAE

Moving from genomes to traits to understand microbial life in Antarctic soils and beyond

Winogradsky Award winner

Noah Fierer, University of Colorado, Boulder, United States



Noah Fierer

University of Colorado, Boulder, United States

Noah Fierer received his bachelor's degree from Oberlin College and his PhD from the University of California, Santa Barbara. After completing postdoctoral work at Duke University, he joined the University of Colorado Boulder where he currently holds the position of Professor in the Department of Ecology and Evolutionary Biology and Director of the Center for Microbial Exploration.

Thursday 20 AUGUST

Poster Session

Meet the Authors
of the odd-numbered posters of the following sessions:



10:00 - 11:00

ROOM ARIKI HALL 2 & 3

PS3.15	Biogeochemical cycles and greenhouse gas dynamics PS3.15.001 - PS3.15.108
PS3.16	Microbial symbioses: it's mutual – or not PS3.16.109 - PS3.16.157
PS3.17	Theoretical microbial ecology PS3.17.158 - PS3.17.174
PS3.18	Indigenous Knowledge: solutions for global environmental challenges PS3.18.175 - PS3.18.177
PS3.19	Human Microbiome: from theory to practice PS3.19.178 - PS3.19.230
PS3.20	Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes PS3.20.231 - PS3.20.312
PS3.21	Microbial frontiers beneath our feet: unravelling soil ecosystem complexity PS3.21.313 - PS3.21.374
PS3.22	Microbial atlases and biogeography: charting mechanisms, diversity and function across scales PS3.22.375 - PS3.22.442

Note: The first part of the poster numbers indicate the day of the session (viz. 3 for Thursday). The second part lists the session number, and the final three-digit part is the poster board number.

The presentations are split over two sessions per day. All odd poster board numbers will be presented in the morning, and all even numbers in the afternoon.

For full listing please see the abstract book or the conference app.

Thursday 20 AUGUST

MS15 - Biogeochemical cycles and greenhouse gas dynamics

Chair:
Chris Greening, Monash University, Australia
Laura Meredith, University of Arizona, United States



11:00 - 13:00

ROOM TE PAEPAE

11:00	<i>Comhydrox: a novel energy metabolism of nitrite-oxidizing bacteria</i> Holger Daims, University of Vienna, Austria Invited Presentation
11:30	<i>Bark-associated diazotroph communities are a cryptic source of nitrogen in forest</i> Paula Gomez Alvarez, Southern Cross University, Australia Oral Presentation
11:45	<i>Anaerobic methane oxidation by ANME-2a at two molar chloride in Orca Basin</i> Jennifer Glass, Georgia Institute of Technology, United States Oral Presentation
12:00	<i>Failed invasion with the desired effect: reduction of farmland N₂O emissions</i> Elisabeth Hiis, Norwegian University of Life Sciences, Norway Oral Presentation
12:15	<i>Ultra-low-oxygen comammox-anammox consortia enable efficient nitrogen removal with lower nitrous oxide</i> Mingsheng Jia, Radboud University & TU Delft, the Netherlands Oral Presentation
12:30	<i>Aerotrophy: a hidden energetic foundation of aerobic ecosystems</i> Chris Greening, Monash University, Australia Invited Presentation

Thursday 20 AUGUST

MS16 - Microbial symbioses: it's mutual – or not

Chairs:

Nicole Dubilier, Max Planck Institute for Marine Microbiology, Germany
Oddur Þór Vilhelmsson, University of Akureyri, Iceland



11:00 - 13:00

ROOM 503 - 505

11:00	<i>Effects of climate warming on cryptogam microbiomes in the sub-Arctic</i> Oddur Þór Vilhelmsson, University of Akureyri, Iceland Invited Presentation
11:30	<i>Looking outside the gill bacteriocyte: activity measurements of digestive-tract symbionts reveal tissue-specific roles in lucinid chemosymbiosis</i> Maria Cristina Alcaraz, University of Vienna, Austria Oral Presentation
11:45	<i>Vitamin B6 catabolites act as interkingdom signals within the marine microbiome</i> Shady Amin, New York University Abu Dhabi, United Arab Emirates Oral Presentation
12:00	<i>Insight into Patescibacteriota phylum through magnetotactic symbiosis</i> Emilie Brivet, Aix-Marseille University, France Oral Presentation
12:15	<i>A xenobiotic triggers host-microbe competition for a limiting resource</i> Sthandiwe Kanyile, University of Pretoria, South Africa Oral Presentation
12:30	<i>Bacterial manipulation of coral juveniles for restoration aquaculture</i> Lone Hoj, Australian Institute of Marine Science, Australia Invited Presentation

Thursday 20 AUGUST

MS17 - Theoretical microbial ecology

Chairs:

Jose Montoya, CNRS, France
Christoff Odendaal, Delft University of Technology, the Netherlands



11:00 - 13:00

ROOM 515

11:00	<i>Title to be confirmed</i> Tom Curtis, Newcastle University, United Kingdom Invited Presentation
11:30	<i>A combination of empirical data and metabolic simulation to study microbial community structure and dynamics</i> Corentin Fournier, Umeå University, Sweden Oral Presentation
11:45	<i>How to quantify dispersal in microbial communities using the Neutral Community Model</i> Jane Fowler, Simon Fraser University, Canada Oral Presentation
12:00	<i>Linking metagenomic organization to microbial ecosystem instability using information theory</i> Anneke van der Geer, San Diego State University, United States Oral Presentation
12:15	<i>Can networks be used as tools for defining emergent properties of microbiomes and their stability?</i> Nicole Hynson, University of Hawaii at Manoa, United States Oral Presentation
12:30	<i>The energetic limits of anaerobic microbial ecology</i> Christoff Odendaal, Delft University of Technology, the Netherlands Invited Presentation

Thursday 20 AUGUST

MS19 - Human Microbiome: from theory to practice



Chairs:

Arturo Casadevall, Johns Hopkins University, United States

Amy Loughman, The University of Melbourne, Australia

11:00 - 13:00

ROOM ARIKI HALL 1

11:00	<i>The states of host-microbe interactions</i> Arturo Casadevall, Johns Hopkins University, United States Invited Presentation
11:30	<i>Host-derived selenium expands redox niche space for strict anaerobes in the human gut ecosystem</i> Gabriela Bravo-Ruiseco, KU Leuven, Rega institute, Belgium Oral Presentation
11:45	<i>The Indian Human Microbiome Initiative (IHMI) reveals Geography and Diet structured interkingdom microbiome interactions across tribal and non-tribal Indian populations</i> Dhiraj Dhotre, National Centre for Cell Science, India Oral Presentation
12:00	<i>Personalized diurnal oscillations in the skin virome mirror bacterial colonization dynamics</i> Shicong Du, City University of Hong Kong, Hong Kong SAR China Oral Presentation
12:15	<i>Designing synbiotics to suppress Pseudomonas aeruginosa via metabolic niche exclusion</i> Alex Styer, University of California, Berkeley, United States Oral Presentation
12:30	<i>The gut-microbiome brain axis: where are we in clinical translation?</i> Amy Loughman, The University of Melbourne, Australia Invited Presentation

Thursday 20 AUGUST

MS20.1 - Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes



Chairs:

Punyasloke Bhadury, Indian Institute of Science Education and Research
Kolkata, India

Ed DeLong, University of Hawaii, Manoa, United States

11:00 - 13:00

ROOM 301-302

11:00	<i>Microbial complexity in mangroves: decoding functional intricacies of biogeochemical cycling from ecological time series</i> Punyasloke Bhadury, Indian Institute of Science Education and Research Kolkata, India Invited Presentation
11:30	<i>Adaptive genomic features and latitudinal distributions of heterotrophic bacteria increasing over three decades in the Sargasso Sea</i> Luis Bolanos, University of Exeter, United Kingdom Oral Presentation
11:45	<i>The role of oxygen availability in shaping microbial methane consumption in a coastal oxygen minimum zone</i> Jennifer Crandall, Montana State University, United States Oral Presentation
12:00	<i>Hidden ocean patterns: measuring microscale microbial seascapes</i> Amaranta Focardi, University of Technology Sydney, Australia Oral Presentation
12:15	<i>Nitrite oxidation in oxygen depleted environments: an experimental and metagenomic investigation</i> Samantha Fortin, Princeton University, United States Oral Presentation
12:30	<i>Effects of hydrostatic pressure on deep-sea chemoautotrophs and implications for the marine carbon budget</i> Anne Dekas, Stanford University, United States Invited Presentation

Thursday 20 AUGUST

MS21 - Microbial frontiers beneath our feet: unravelling soil ecosystem complexity



ISME20
AUCKLAND

Chairs:

Fernando Dini Andreote, ESALQ/University of Sao Paulo, Brazil
Syrie Hermans, Auckland University of Technology, New Zealand

11:00 - 13:00

ROOM 303-305

11:00	<i>Advancing agricultural sustainability through microbial ecology in soil-plant systems</i> Fernando Dini Andreote, ESALQ/University of Sao Paulo, Brazil Invited Presentation
11:30	<i>Quantifying microbial soil organic carbon mineralization rates via tree-of-life sequencing (TOLseq)</i> Anna Burns, University of Greifswald, Germany Oral Presentation
11:45	<i>Protist symbionts - overlooked modulators in the microbial soil food web</i> Astrid Collingro, University of Vienna, Austria Oral Presentation
12:00	<i>Revegetation restructures soil microbial functions and life-history strategies over decadal scales</i> Timothy Ghaly, Macquarie University, Australia Oral Presentation
12:15	<i>Decoding the soil microbiome: continental-scale genome-resolved insights across agricultural ecosystems</i> Laura Moore, Colorado State University, United States Oral Presentation
12:30	<i>Soil microbial dynamics across a long-term experiment highlight opportunities for supporting climate resilient agroecosystems</i> Mallory Choudoir, North Carolina State University, United States Invited Presentation

Thursday 20 AUGUST

MS22 - Microbial atlases and biogeography: charting mechanisms, diversity and function across scales



ISME20
AUCKLAND

Chairs:

Manpreet Dhami, Bioeconomy Science Institute/University of Auckland, New Zealand
Caitlin Singleton, Aalborg University, Denmark

11:00 - 13:00

ROOM TE WHARAU

11:00	<i>Disentangling biotic and abiotic factors structuring local and regional microbial communities in floral nectar</i> Manpreet Dhami, Bioeconomy Science Institute/University of Auckland, New Zealand Invited Presentation
11:30	<i>National-scale biogeography and function of river biofilm microbial communities</i> Amy Thorpe, UK Centre for Ecology & Hydrology, United Kingdom Oral Presentation
11:45	<i>Towards a (meta)genomic account of prokaryotic biogeography</i> Luis M. Rodriguez-R, Aalborg University, Denmark Oral Presentation
12:00	<i>Function-based global ecosystem classifications help to understand soil microbiomes' drivers</i> Eugenio Perez-Molphe-Montoya, University of Zurich, Switzerland Oral Presentation
12:15	<i>Biogeographic realms in fungi and bacteria differ fundamentally from those in macroorganisms</i> Antonin Machac, IMIC Institute of Microbiology, Czechia Oral Presentation
12:30	<i>Distribution of enigmatic phylogenetic lineages of protists and fungi</i> Leho Tedersoo, University of Tartu, Estonia Invited Presentation

Thursday 20 AUGUST

Panel Discussion

Microbes without borders – a global microbial coalition for climate action

Chairs:

Nguyen K. Nguyen, American Society for Microbiology, United States

Lucy Harper, Applied Microbiology International, United Kingdom



13:30 - 14:30

ROOM 503-505

Description	In September 2025, 10 microbiology organizations and 6 scientific journals launched the first global climate change strategy. This described a roadmap for microbiology organizations and microbiologists to take action to address climate change through policy, communication, partnership, and research to scale the application of microbes. Four strategies were laid out: 1. Speak With One Global Voice: Form a formal coalition of microbiology societies and partner organizations to strengthen credibility, expand political influence, attract new partners and amplify the microbiology community's voice. 2. Embed Microbial Science in Climate Policy: Engage policymakers, funders, entrepreneurs and advocacy groups to ensure microbial science is reflected in climate strategies and investment decisions. 3. Tell the Story and Share the Science: Use storytelling, advocacy and media strategies to elevate microbes in the climate conversation. 4. Launch High-Impact Demonstration Projects: Pilot real-world demonstration projects (e.g., reducing fertilizer runoff and restoring soil microbiomes) that achieve measurable ecological and economic outcomes, foster trust and inform policy. The aims of this session are to share the vision and goals of the coalition and welcome input from the participants, as well as a call for participation to take concrete action on the next step in climate change mitigation.
Panel Members	Janet Jansson, AMI Nguyen K. Nguyen, ASM Jack Gilbert, AMI Raquel Peixoto, ISME Max Haggblom, FEMS Lucy Harper, AMI representatives from the Australian Microbiology Society and Global ONCE

Thursday 20 AUGUST

Panel Discussion

DEIA Panel: When funding shapes inclusion: DEI policy shifts and their global consequences

Chair:

Ann Gregory, University of Calgary, Canada



13:30 - 14:30

ROOM TE WHARAU

Description	Changes in government priorities and research funding are reshaping how diversity, equity, and inclusion (DEI) initiatives are supported around the world. These shifts affect recruitment, training, international collaborations, and opportunities for researchers at different career stages. This panel will bring together microbial ecologists around the world to discuss how changing DEI policies are affecting the microbiology community. Panelists will share perspectives from different countries, discuss the practical impacts on research and careers, and explore ways that institutions, funding agencies, and scientific societies can continue to support inclusive research environments in the face of changing priorities.
Panel Members	Chioma Blaise Chikere, University of Port Harcourt, Nigeria Ashish Malik, University of Edinburgh, United Kingdom Dmitrijeva Marija, ETH Zurich, Switzerland J. Cameron Thrash, University of Southern California, United States

Thursday 20 AUGUST

AS15.1 - Biogeochemical cycles and greenhouse gas dynamics

Chair:
Chris Greening, Monash University, Australia



14:30 - 16:30 ROOM TE PAEPAE

14:30	<i>Revising a century-old paradigm: diversity, ecology, and metabolic flexibility of thermoproteotal methanogens</i> Roland Hatzenpichler, Montana State University, United States Invited Speaker
15:00	<i>Arsenate reduction coupled to anaerobic oxidation of methane mediated by 'Candidatus Methanoperedens nitroreducens'</i> Georgina Joyce, University of Queensland, Australia Oral Presentation
15:15	<i>Seasonal 'on/off' methane fluxes track microbial signatures in an Amazonian floodplain</i> Júlia Brandao Gontijo, University of California, Davis, United States Short Talk
15:20	<i>First evidence for nitrogen fixation by cable bacteria in nitrogen-free sediments and seagrass systems</i> Marta Sudo, Aarhus University, Denmark Short Talk
15:25	<i>Cryptic denitrification bypasses nitrous oxide in an isolated strain of Halomonas sp</i> Perran Cook, Monash University, Australia Short Talk
15:30	<i>Reductive glycine pathway as a pervasive and redox-flexible pillar of chemolithoautotrophic carbon fixation in global saline lakes</i> Lei Gao, Sun Yat-sen University, China Short Talk
15:35	<i>Novel putative methanotrophs associated with low methane fluxes from thawing permafrost</i> Clifton Bueno de Mesquita, University of Colorado, United States Short Talk
15:45	<i>Methylphosphonate utilization as a sole phosphorus source by a methanotroph via the C-P lyase pathway</i> Yong-Man Kim, Chungbuk National University, South Korea Oral Presentation
16:00	<i>A hybrid [NiFe]-[FeFe] hydrogenase drives fermentative hydrogen production in a novel hyperthermophilic archaeon</i> Anthony Kohtz, Monash University, Australia Oral Presentation
16:15	<i>Discovery of a novel syntrophic niche: methoxylated aromatic compounds degradation</i> Sachiko Sakamoto, National Institute of Advanced Industrial Science and Technology, Japan Oral Presentation

Thursday 20 AUGUST

AS16 - Microbial symbioses: it's mutual – or not

Chairs:
Nicole Dubilier, Max Planck Institute for Marine Microbiology, Germany
Oddur Þór Vilhelmsson, University of Akureyri, Iceland



14:30 - 16:30 ROOM 503 - 505

14:30	<i>The mechanisms underlying whitefly reproduction manipulation by symbionts</i> Jun-Bo Luan, Shenyang Agricultural University, China Invited Presentation
15:00	<i>Dynamics of photosymbiosis establishment revealed by single-cell dual proteomics</i> Chuan Ku, Academia Sinica, Taiwan Oral Presentation
15:15	<i>Marine nematodes harbor diverse bacterial endosymbionts and demonstrate evolutionary conservation of microbiome taxa</i> Holly Bik, University of Georgia, United States Short Talk
15:20	<i>Strain-level variation alters host-parasite interaction dynamics in the Halorubrum lacusprofundi – Candidatus Nanohaloarchaeum antarcticus system</i> Joshua Hamm, Royal Netherlands Institute for Sea Research, the Netherlands Short Talk
15:25	<i>Genetic determinants of symbiotic lifestyle transitions in Rhizobium leguminosarum</i> Hayley Knights, University of Oxford, United Kingdom Short Talk
15:30	<i>Insights into the function of bacterial nutritional endosymbionts of Australian ticks from metagenomic and metatranscriptomic sequencing</i> Laurene Leclerc, University of Sydney, Australia Short Talk
15:35	<i>Nitrogen-dependent regulation of fungal secondary metabolism and symbiosis by TFSYMB1 in Trichoderma virens</i> Artemio Mendoza-Mendoza, Lincoln University, New Zealand Short Talk
15:40	<i>Coinfection dampens the effect of temperature on a host-parasite interaction</i> Ian Will, University of British Columbia, Canada Short Talk
15:45	<i>Host control over symbiont cell morphology ensures effective vertical transmission in beewolf wasps</i> Bernal Matarrita, MPI for Chemical Ecology, Germany Oral Presentation
16:00	<i>Adapting rapidly: symbiont strain diversity, horizontal gene transfer and mobile genetic elements accelerate evolution in chemosynthetic symbioses</i> Nicole Dubilier, MPI for Marine Microbiology, Germany Invited Presentation

Thursday 20 AUGUST

AS17 - Theoretical microbial ecology

Chairs:

Jose Montoya, CNRS, France

Christoff Odendaal, Delft University of Technology, the Netherlands



ISME20
AUCLAND

14:30 - 16:30

ROOM 515

14:30	<i>Scaling-up biodiversity-ecosystem functioning theory</i> Jose Montoya, CNRS, France Invited Presentation
15:00	<i>Growth-density inversion reveals super-, not sub-, linear population growth</i> Andrew Letten, University of Queensland, Australia Oral Presentation
15:15	<i>Beyond ATP yield: resource constraint drives catabolic strategy selection in anaerobic fermentation</i> Natalia-Ana Nadal Alemany, TU Delft, the Netherlands Short Talk
15:20	<i>An integrated framework for studying host-virus interactions across ecological scales</i> Dinesh Kumar Kuppa Baskaran, University of Wisconsin-Madison, United States Short Talk
15:25	<i>Microbial biogeography at the national scale – the biogeography of microbes in Danish soils</i> Francesco Delogu, University of Aalborg, Denmark Short Talk
15:30	<i>Differential ecological filtering governs assembly of the root nodule microbiome</i> Eglantina Lopez-Echartea, North Dakota State University, United States Short Talk
15:35	<i>How does microbial diversity affect ecological stability?</i> Ming Liu, University of Oxford, United Kingdom Short Talk
15:40	<i>Metabolic switching promotes coexistence under fluctuating resources in microbial communities</i> Yu-Pei Tseng, University of Queensland, Australia Short Talk
15:45	<i>Coevolutionary drivers of phyllosymbiosis and microbiome divergence in host-microbe associations</i> Miguel Lurgi, Swansea University, United Kingdom Oral Presentation
16:00	<i>Holobiont evolution is context-dependent but amplified during environmental change</i> William Pearman, University of Auckland, New Zealand Invited Presentation

Thursday 20 AUGUST

AS18 - Indigenous Knowledge: solutions for global environmental challenges

Chairs:

Amanda Black, Lincoln University, New Zealand

Expedito Olimi, University of Southampton, United Kingdom



ISME20
AUCLAND

14:30 - 16:30

ROOM 516

14:30	<i>The enduring legacy of Africa's Indigenous knowledge systems in a contemporary world</i> Expedito Olimi, University of Southampton, United Kingdom Invited Presentation
15:00	<i>Characterising the gut microbiomes of Māori and Pacific Islanders in Aotearoa New Zealand</i> Ella Silk, The University of Otago, New Zealand Oral Presentation
15:15	<i>Indigenous led naming of novel marine microorganisms: community guided taxonomy with Pictou Landing First Nation</i> Maria Bautista Chavarriaga, University of Calgary, Canada Short Talk
15:20	<i>Exploring and leveraging the indigenous Indonesian fermented food microbiome for human health</i> Wisnu Adi Wicaksono, Graz University of Technology, Austria Short Talk
15:25	<i>A call to action: developing community guidelines for naming microbes from sequence data</i> Marika Palmer, University of Manitoba, Canada Short Talk
15:30	<i>Co-constructing mycorrhizal ecology in the Atacama Desert through Lickanantay and Western scientific perspectives</i> César Marín, Universidad Santo Tomás, Chile Invited Presentation
16:00	<i>Understanding soil ecosystem resilience in New Zealand's most iconic and threatened kauri forests</i> Amanda Black, Lincoln University, New Zealand Invited Presentation

Thursday 20 AUGUST

AS19 - Human Microbiome: from theory to practice



Chairs:

Arturo Casadevall, Johns Hopkins University, United States

Amy Loughman, The University of Melbourne, Australia

14:30 - 16:30

ROOM ARIKI HALL 1

14:30	<i>Gut microbiome mediates age-associated carotid plaque formation in the three-generation young Finns study</i> Dattatray Mongad, University of Turku, Finland Invited Presentation
15:00	<i>From associations to mechanisms: a data-driven framework for predicting and validating microbial interactions in the human gut microbiome</i> Olivia West, Queensland University of Technology, Australia Oral Presentation
15:15	<i>Viral Biogeography in the healthy human body</i> Ann Gregory, University of Calgary, Canada Short Talk
15:20	<i>Autologous fecal microbiota transplantation restores the infant gut microbiota and metabolome after antibiotics</i> Maria Gloria Dominguez Bello, Rutgers University, United States Short Talk
15:25	<i>Extracorporeal shock wave therapy promotes skin microbiome resilience following burn injury: evidence from a randomized controlled trial</i> Yeongyun Jung, Hallym University Hangang Sacred Heart Hospital, South Korea Short Talk
15:30	<i>Antidepressants reshape human gut microbiome and resistome via prophage induction</i> Ji Lu, University of Queensland, Australia Short Talk
15:35	<i>Long COVID contributes to gut microbiota alterations in a South African cohort</i> Louis Burger, Stellenbosch University, South Africa Short Talk
15:40	<i>Inverse microbial enrichment patterns between periodontitis and caries revealed by shotgun metagenomics</i> Yufeng Zhang, The University of Hong Kong, Hong Kong SAR China Short Talk
15:45	<i>Mining stool metagenomics for novel therapeutic targets for the treatment of Inflammatory Bowel Disease</i> Lauren Schooth, University of Newcastle, Australia Oral Presentation
16:00	<i>Microbiota and ageing: ecological determinants of health and disease in older adults</i> Geraint Rogers, South Australian Health and Medical Research Institute, Australia Invited Presentation

Thursday 20 AUGUST

AS20 - Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes



Chairs:

Punyasloke Bhadury, Indian Institute of Science Education and Research
Kolkata, India

Ed DeLong, University of Hawaii, Manoa, United States

14:30 - 16:30

ROOM 301-302

14:30	<i>Genomic perspectives on microbial community dynamics in space and time in the North Pacific Subtropical Gyre</i> Ed DeLong, University of Hawaii, Manoa, United States Invited Presentation
15:00	<i>Bottom-up control and viral dynamics through lytic-lysogenic switching structures prokaryotes cooccurrences during marine phytoplankton blooms</i> Marjan Ghotbi, GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel, Germany Oral Presentation
15:15	<i>Comparative metagenomics reveal taxonomic and metabolic heterogeneity of sediment microbes from the Great Barrier Reef</i> Hisatake Ishida, The University of Queensland, Australia Short Talk
15:20	<i>Motile marine bacteria pursue population growth through Night-watch strategy under sparse nutrient landscape</i> Taichi Ishikawa, University of Tsukuba, Japan Short Talk
15:25	<i>A widespread aminotransferase catalyses a key step in de novo cysteinolic acid biosynthesis in marine bacteria and phytoplankton</i> Shengwei Liu, University of Warwick, United Kingdom Short Talk
15:30	<i>Feast or friction? Marine polysaccharides as nutrients and stressors in bacterial life</i> Jana Massing, MARUM, University Bremen, MPI, Germany Short Talk
15:35	<i>Redox-driven diversification structures marine Nitrospinota populations in the dark ocean</i> Maria Pachiadaki, Woods Hole Oceanographic Institution, United States Short Talk
15:40	<i>Distribution of Vibrio spp. among microhabitats and monsoon seasons in Singapore's coastal waters</i> Jeslyn Poo, Nanyang Technological University, Singapore Short Talk
15:45	<i>The evolutionary history of the important marine N₂-fixer Trichodesmium, a story of gene gain, loss and selection</i> Eric Webb, University of Southern California, United States Oral Presentation
16:00	<i>Mutual adaption of an ixotrophic bacterial predator and its prey in the ocean</i> Yun-Wei Lien, University of Vienna, Austria Oral Presentation
16:15	<i>A catastrophic marine mortality event caused by a complex algal bloom including the novel brevetoxin producer, Karenia cristata (Dinophyceae)</i> Shauna Murray, University of Technology Sydney, Australia Oral Presentation

AS21 - Microbial frontiers beneath our feet: unravelling soil ecosystem complexity

Chairs:

Fernando Dini Andreote, ESALQ/University of Sao Paulo, Brazil
Syrie Hermans, Auckland University of Technology, New Zealand



ISME20
AUCKLAND

14:30 - 16:30

ROOM 303-305

14:30	<i>From drought to succession: uncovering the roles of phages and vesicles in soil microbiome dynamics</i> Joana Falcao Salles, University of Groningen, the Netherlands	Invited Presentation
15:00	<i>Ecological and genomic transitions in soil microbiomes across the deep Critical Zone</i> James Tiedje, Michigan State University, United States	Oral Presentation
15:15	<i>When bacteria come home: chemical and biological filters can determine the influence of SynComs on the bacterial structure of the soil</i> Nariane de Andrade, São Paulo University, Brazil	Short Talk
15:20	<i>Plant phylogeny and mycorrhizal strategy shape multi-kingdom soil community assembly in a common garden experiment</i> Manikandan Ariyan, University of Tartu, Estonia	Short Talk
15:25	<i>Unravelling the role of hydrogen cycling microorganisms in agricultural soils</i> Zahra Islam, The University of Melbourne, Australia	Short Talk
15:30	<i>Recovery of microbial and viral ecophysiology linked to carbon accrual functions in peatlands under restoration</i> Ashish Malik, University of Edinburgh, United Kingdom	Short Talk
15:35	<i>Post-fire functional recovery of soil microbial communities in a mixed temperate forest</i> Lenka Mészárošová, The Institute of Microbiology of the CAS, Czechia	Short Talk
15:40	<i>Phosphate amendment drives bloom of RNA phages after soil wet-up</i> Ella Tali Sieradzki, Aarhus University, Denmark	Short Talk
15:45	<i>Genome-resolved metatranscriptomics reveals the functional basis of soil microbial desiccation strategies</i> Preston Tasoff, University of California, Berkeley, United States	Oral Presentation
16:00	<i>Unravelling microbe-microbe interactions beneath our feet</i> Laurent Philippot, INRAE, Agroecology Department, France	Invited Presentation

Thursday 20 AUGUST

AS22 - Microbial atlases and biogeography: charting mechanisms, diversity and function across scales

Chairs:

Manpreet Dhami, Bioeconomy Science Institute/University of Auckland, New Zealand
Caitlin Singleton, Aalborg University, Denmark



ISME20
AUCKLAND

14:30 - 16:30

ROOM TE WHARAU

14:30	<i>MicroFlora Danica, Denmark's microbial atlas</i> Caitlin Singleton, Aalborg University, Denmark	Invited Presentation
15:00	<i>A global atlas of the 3-domain marine plankton microbiome</i> Jed Fuhrman, University of Southern California, United States	Oral Presentation
15:15	<i>Australian Microbiome – enabling insights into environmental microbial ecosystems</i> Andrew Bissett, CSIRO, Australia	Short Talk
15:20	<i>Heterogeneous greening in Svalbard also emerges from plant-soil-microbial interactions</i> Lena Bakker, ETH Zurich D-EAPS Geological Institute, Switzerland	Short Talk
15:25	<i>Uncovering genomic drivers of phage host range and global prevalence in the human gut virome</i> Antônio Pedro Camargo, University of São Paulo, Brazil	Short Talk
15:30	<i>Prokaryotic insertion sequences in microbial ecology and evolution</i> Alexander Probst, University of Duisburg-Essen, Germany	Short Talk
15:35	<i>Decadal and global marine metagenomics reveal imitervirales as sensitive bioindicators of ocean warming</i> Shengwei Hou, Southern University of Science and Technology, China	Short Talk
15:40	<i>Mapping the three-dimensional landscape of coral photosymbionts: Cladocopium-Durussdinium co-occurrence patterns and disturbance-driven shifts</i> Alyssa Tomkies, Victoria University of Wellington, New Zealand	Short Talk
15:45	<i>The planktonic microbiome of the Great Barrier Reef</i> Yun Kit Yeoh, Australian Institute of Marine Science, Australia	Oral Presentation
16:00	<i>From national gradients to millennial records: microbial community structure across space and time</i> Susannah Wood, Lincoln University, New Zealand	Invited Presentation

Thursday 20 AUGUST

Poster Session

Meet the Authors
of the even-numbered posters of the following sessions:



16:30 - 17:30

ROOM ARIKI HALL 2 & 3

PS3.15	Biogeochemical cycles and greenhouse gas dynamics PS3.15.001 - PS3.15.108
PS3.16	Microbial symbioses: it's mutual – or not PS3.16.109 - PS3.16.157
PS3.17	Theoretical microbial ecology PS3.17.158 - PS3.17.174
PS3.18	Indigenous Knowledge: solutions for global environmental challenges PS3.18.175 - PS3.18.177
PS3.19	Human Microbiome: from theory to practice PS3.19.178 - PS3.19.230
PS3.20	Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes PS3.20.231 - PS3.20.312
PS3.21	Microbial frontiers beneath our feet: unravelling soil ecosystem complexity PS3.21.313 - PS3.21.374
PS3.22	Microbial atlases and biogeography: charting mechanisms, diversity and function across scales PS3.22.375 - PS3.22.442

Note: The first part of the poster numbers indicate the day of the session (viz. 3 for Thursday). The second part lists the session number, and the final three-digit part is the poster board number.

The presentations are split over two sessions per day. All odd poster board numbers will be presented in the morning, and all even numbers in the afternoon.

For full listing please see the abstract book or the conference app.

Thursday 20 AUGUST

Plenary Session

Chair:
James Tiedje, Michigan State University, United States



17:30 - 18:30

ROOM TE PAEPAE

Multi-omics for microbiomes – from humans to oil to soil

Tiedje Award winner
Janet Jansson, United States



Janet Jansson
PNNL, United States

Janet Jansson established a successful career in Europe at the Swedish University of Agricultural Sciences (2004-2007) as well as in the United States at Michigan State University, Lawrence Berkeley National Laboratory (2007-2014) and Pacific Northwest National Laboratory (2014-2021). Even though she retired in 2021, she is still active as a Fellow of the American Academy of Microbiology, the Washington State Academy of Science, and the American Association for the Advancement of Science. Janet Jansson has served as an expert on numerous national and international advisory panels, including the White House's Microbiome Initiative, the National Academies of Sciences, the U.S. National Committee for Soil Science, and NASA. Jansson was the President and board member of the ISME society until 2018.

18:30 - 19:30

ROOM ARIKI HALL 2 & 3

Award Reception in the Poster, Exhibition and Catering Area



To honour all our Awardees of the Tiedje Award, the Winogradsky Award, the Alma Dal Co Award, and IWA Awards, a special reception is organised with drinks and finger food.

Thursday 20 AUGUST



ISME20
AUCKLAND

20th International Symposium
on Microbial Ecology

Scientific Programme

Friday 21 August

Friday 21 August 2026									
TIME		TE PAEPAE	503 - 505	515	516	ARIKI HALL 1	301 - 302	303 - 305	TE WHARAU
08:30		Registration and speaker preparation room open							
09:00 - 10:00	Plenary Session	Alma Dal Co Award Presentation Isabelle Laforest-Lapointe Canada							
10:00 - 10:30		Tea and coffee break in the Exhibition and Poster Area in Ariki Hall 2 and 3							
10:30 - 12:30	Morning Sessions		Microbiome- based strategies for climate- smart (/resilient) agriculture	Built environment	Microbiome based products	Antimicrobial resistance: a One Health perspective	Breaking Barriers: novel techniques for microbial ecology	Microbial consortia – natural to synthetic	Invisible Allies: the role of microbes in biodiversity conservation
		Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes							
13:00 - 14:00		Lunch Break							
13:00 - 14:00									ISME General Assembly
14:00 - 16:00	Afternoon Sessions	Biogeochemical cycles and greenhouse gas dynamics	Microbiome- based strategies for climate- smart (/resilient) agriculture	Built environment		Antimicrobial resistance: a One Health perspective	Breaking Barriers: novel techniques for microbial ecology	Microbial consortia – natural to synthetic	Invisible Allies: the role of microbes in biodiversity conservation
16:00 - 18:00	Plenary Session	Closing Ceremony Margaret McFall-Ngai United States							

Plenary Session

Chair:

Nicole Dubilier, Max Plank Institute for Marine Microbiology, Bremen, Germany



09:00 - 10:00

ROOM TE PAEPAE

Lessons from the frontier: host-microbe interactions and microbial community dynamics in non-model systems

Alma Dal Co Award Winner

Isabelle Laforest-Lapointe, Université de Sherbrooke, Canada



Isabelle Laforest-Lapointe

Université de Sherbrooke, Canada

Isabelle Laforest-Lapointe has been an Assistant Professor at Université de Sherbrooke since 2020 and holds a Canada Research Chair Tier II in Applied Microbial Ecology. She was educated in a highly interdisciplinary way at Université du Québec à Montréal and Calgary in Canada, and the Universitat Autònoma de Barcelona and the Universitat Politècnica de Catalunya in Spain. Her international stature in the field of microbial ecology led to an invitation to serve on the scientific committee of the Microbiome Data and several editorial boards, including ISME Communications.

Friday 21 AUGUST

MS23 - Microbiome-based strategies for climate-smart (/resilient) agriculture

Chair:

Dilfuza Egamberdieva, National University of Uzbekistan, Uzbekistan

Convenor:

Shilpi Sharma, Indian Institute of Technology Delhi, India



ISME20
AUCKLAND

10:30 - 12:30

ROOM 503-505

10:30	<i>Plant endophytes as drivers of climate-resilient cropping systems</i> Dilfuza Egamberdieva, National University of Uzbekistan, Uzbekistan Invited Presentation
11:00	<i>Grazing moderates the response of soil microbiomes to elevated CO₂</i> Freya Newton, Victoria University Wellington, New Zealand Oral Presentation
11:15	<i>Linking water management to methanogen community networks and substrate generation in rice soils</i> Raegan Paul, Colorado State University, United States Oral Presentation
11:30	<i>Rooted in symbiosis: exploring bacterial dynamics and microevolutionary changes in soybean (Glycine max)</i> Christina Straub, University of Vienna, Austria Oral Presentation
11:45	<i>Regenerative agriculture enhances soil microbiome functioning & soil ecosystem multifunctionality across diverse farming systems</i> Gwen Grelet, The Bioeconomy Science Institute, New Zealand Oral Presentation
12:00	<i>Global exploration of drought-tolerant bacteria in the wheat rhizosphere reveals microbiota shifts and functional taxa enhancing plant resilience</i> Qian Xiang, Institute of Urban Environment, Chinese Academy of Sciences, China Oral Presentation
12:15	<i>Steering the grapevine microbiome against downy mildew</i> Corinne Vacher, Université Bourgogne France-Comté (INRAE), France Oral Presentation

Friday 21 AUGUST

MS24 - Built environment

Chairs:

Jack Gilbert, University of California, San Diego, United States

Aki Sinkkonen, University of Eastern Finland, Finland



ISME20
AUCKLAND

10:30 - 12:30

ROOM 515

10:30	<i>Microbial life on the edge of survival: the built environment as a model system for dormancy, persistence and adaptation</i> Jack Gilbert, University of California, San Diego, United States Invited Presentation
11:00	<i>Microbial processes simultaneously power and impede drinking water biofilter function</i> Iria Feijóo Rey, Lund University, Sweden Oral Presentation
11:15	<i>Unveiling the dual role of viruses in shaping public health risks and sulfur metabolism in sewage sediments across functional urban areas</i> Zhiyuan Yao, Ningbo University, China Oral Presentation
11:30	<i>From source to tap: unravelling the biome of a drinking water distribution network</i> Thomas Pluym, Ghent University, Belgium Oral Presentation
11:45	<i>Restoring environmental microbial diversity in urban landscapes: from plant and soil microbiomes to immune responses</i> Marja I. Roslund, Natural Resources Institute Finland, Finland Oral Presentation
12:00	<i>Convergent microbiome engineering strategies for sustainable control of opportunistic pathogens in built environments</i> Claudia Gunsch, Duke University, United States Invited Presentation

Friday 21 AUGUST

MS25 - Microbiome-based products

Chairs:

Colleen Cutcliffe, Pendulum, United States

Ivan Liacho, Phase Genomics, United States



ISME20
AUCKLAND

10:30 - 12:30

ROOM 516

Description	This Session brings together three industry leaders shaping the microbiome technology landscape, from novel product development to translating microbiome science into commercial applications. Each speaker will share insights from their work at the intersection of research and market-ready solutions. The Session closes with a panel discussion, giving attendees the chance to engage speakers directly on trends, challenges, and opportunities in microbiome-based products.
10:30	Title to be confirmed Colleen Cutcliffe, Pendulum, United States Invited Presentation
11:00	Beyond Binning: using proximity ligation technology to deconvolve metagenomes and assign mobile elements to their microbial hosts Ivan Liachko, Phase Genomics, United States Invited Presentation
11:30	Coping with FOMO (Fear of Multi-Omics) Ken McGrath, Cmbio, United States Invited Presentation
12:00	tbc Panel discussion

Friday 21 AUGUST

MS26 - Antimicrobial resistance: a One Health perspective

Chairs:

Laura de Nies, University of Oxford, United Kingdom

Md. Tanvir Rahman, Bangladesh Agricultural University, Bangladesh



ISME20
AUCKLAND

10:30 - 12:30

ROOM ARIKI HALL 1

10:30	Resistome connectivity across human, animal and environmental interfaces in South Africa: a One Health genomic analysis of multidrug-resistant Escherichia coli Sabiha Essack, University of KwaZulu-Natal, South Africa Invited Presentation
11:00	De novo generation of antimicrobial peptides from environmental metagenomes using a genomic language model Carla Greco, Basecamp Research, United Kingdom Oral Presentation
11:15	Inter-plasmid transfer of antibiotic resistance genes accelerates antibiotic resistance in bacterial pathogens Xiaolong Wang, Sun Yat-sen University, China Oral Presentation
11:30	Insights into the African Klebsiella pneumoniae genomes Mutshiene Deogratias Ekwanzala, ISP Mbandaka, Democratic Republic of Congo Oral Presentation
11:45	Metabolic niches and their association with the persistence of antimicrobial resistant bacteria Frank Schreiber, Bundesanstalt für Materialforschung und-prüfung (BAM), Germany Oral Presentation
12:00	Understanding antibiotic-induced blooms driving horizontal gene transfer of antibiotic resistance Laura de Nies, University of Oxford, United Kingdom Invited Presentation

Friday 21 AUGUST

MS27 - Breaking Barriers: novel techniques for microbial ecology

Chairs:

Michael Wagner, University of Vienna, Austria

Cynthia Whitchurch, Nanyang Technological University, Singapore



10:30 - 12:30

ROOM 301-302

10:30	<i>Microbial diversity as a foundation for biological AI</i> Libusha Kelly, Albert Einstein College of Medicine, United States Invited Presentation
11:00	<i>Single-molecule visualization reveals the biophysical dynamics of vesicle-mediated antimicrobial resistance plasmid transfer in Escherichia coli</i> Stelios Chatzimichail, University of Cyprus, Cyprus Oral Presentation
11:15	<i>MetaRiboSeq reveals prokaryotic translational investment in prophages across ecosystems</i> Kankan Zhao, University of California, San Diego, United States Oral Presentation
11:30	<i>VirionFISH – a novel whole genome-based approach to characterising virus host dynamics in-situ</i> Harry Ling, Queensland University of Technology, Australia Oral Presentation
11:45	<i>Combined cryo-electron tomography imaging and taxonomical identification of microbes</i> Nikolai Petrosian, ETH Zurich, Switzerland Oral Presentation
12:00	<i>Chemical imaging-based insights into the human gut microbiome drug interaction network</i> Michael Wagner, University of Vienna, Austria Invited Presentation

Friday 21 AUGUST

MS28 - Microbial consortia – natural to synthetic

Chair:

Mengcen Wang, Zhejiang University, China



10:30 - 12:30

ROOM 303-305

10:30	<i>Harnessing pathogen-microbiota mutualism for crop protection</i> Mengcen Wang, Zhejiang University, China Invited Presentation
11:00	<i>Soil-gradient-derived bacterial synthetic communities Enhance drought tolerance in Quercus pubescens and Sorbus domestica seedlings</i> Ivan Aleksieienko, Aix-Marseille University, France Oral Presentation
11:15	<i>SYNONIM: Systematic design of functionally representative microbial communities</i> Benjamin Coltman, University of Vienna, Austria Oral Presentation
11:30	<i>Fungal hyphae promote bacterial contact-dependent killing during surface-associated growth</i> Miao Han, University of Konstanz, Germany Oral Presentation
11:45	<i>Competitive microbial interactions and adaptive mutations enhance synthetic denitrifying community functions</i> Zhili He, Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai), China Oral Presentation
12:00	<i>From representation to control in complex ecological networks</i> Ophelia Venturelli, Duke University, United States Invited Presentation

Friday 21 AUGUST

MS29 - Invisible Allies: the role of microbes in biodiversity conservation

Chairs:

Madeleine van Oppen, The University of Melbourne, Australia
Elin Videvall, Uppsala University, Sweden



ISME20
AUCKLAND

10:30 - 12:30

ROOM TE WHARAU

10:30	<i>Fecal microbiota transplants influence gut microbiota, serum health markers, and rehabilitation benchmarks in rescued northern elephant seal pups</i> Sally Bornbusch, Smithsonian's National Zoo and Conservation Biology Institute, United States Invited Presentation
11:00	<i>Assessing viability and persistence of probiotic bacteria for long-term climate resilience in corals</i> Talisa Doering, The University of Melbourne, Australia Oral Presentation
11:15	<i>Urban wild bee well-being revealed by gut metagenome data: a mason bee model</i> Yiran Li, Xi'an Jiaotong-Liverpool University, China Oral Presentation
11:30	<i>Immune-microbial interactions in an evolutionarily distinct reptile: implications for microbiome-informed conservation</i> Danielle Middleton, Bioeconomy Science Institute, New Zealand Oral Presentation
11:45	<i>Getting to the root of the matter - unearthing the rhizosphere microbiome of Canada's prairie grasses for restoration</i> Pasindu Mudalige, The University of Calgary, Canada Oral Presentation
12:00	<i>Beneficial microbes as invisible allies in seaweed health and resilience</i> Suhelen Egan, University of New South Wales, Australia Invited Presentation

Friday 21 AUGUST

MS20.2 - Vast seas, hidden powers: unity, diversity, and dynamics in the undersea world of marine microbes

Chairs:

Punyasloke Bhadury, Indian Institute of Science Education and Research Kolkata, India
Ed DeLong, University of Hawaii, Manoa, United States



ISME20
AUCKLAND

11:30 - 12:30

ROOM TE PAEPAE

11:30	<i>Divergent patterns of cyanophage infection and diversity across environmental gradients in the North Pacific Ocean</i> Debbie Lindell, Technion- Israel Institute of Technology, Israel Invited Presentation
12:00	<i>Examining links between pelagic waters and benthic sediment microbial communities across space and seasons in Baltic Sea coastal areas</i> Jessica Wallbank, Linnaeus University, Sweden Short Talk
12:05	<i>Pangenomics decodes the hidden diversification and adaptation trajectory of cosmopolitan eukaryotic picophytoplankton Mamiellales</i> Yangbing Xu, The Hong Kong University of Science and Technology, Hong Kong SAR China Short Talk
12:10	<i>Widespread non-canonical virus-host associations underpin robust viral control of marine microbes</i> Cheuk Man Yung, The Hong Kong University of Science and Technology, Hong Kong SAR China Short Talk
12:15	<i>Sialic acid remodeling attenuates viral infection in a marine microalga</i> Ben Labbel, Weizmann Institute of Science, Israel Oral Presentation

Friday 21 AUGUST

GENERAL ASSEMBLY

Chair:
Raquel Peixoto, ISME President



13:00 - 14:00

ROOM TE WHARAU

All ISME Members are invited to attend the General Assembly of the International Society for Microbial Ecology to hear what has been happening with the Society, the Journals and Events.

AS15.2 - Biogeochemical cycles and greenhouse gas dynamics

Chairs:
Chris Greening, Monash University, Australia
Laura Meredith, University of Arizona, United States



14:00 - 16:00

ROOM TE PAEPAE

14:00	Hydrogen as habitat: microbial ecology of soil H₂ consumption Laura Meredith, University of Arizona, United States	Invited Presentation
14:30	Isolation of Crenothrix bacteria reveals the distinct ecophysiologicals of filamentous methanotrophs and adaptations to O₂ limitation Jackson Tsuji, National Institute for Basic Biology, Japan	Oral Presentation
14:45	Niche complementarity maintains functional redundancy in oligotrophic nitrifying biofilms Alejandro Palomo Gonzalez, Southern University of Science and Technology, China	Short Talk
14:50	Trick me twice: enzyme-catalyzed isotope equilibration by nitrite oxidoreductase (NXR) can obscure 15N-tracer based nitrite oxidation and nitrate reduction rate measurements Petra Pjevac, University of Vienna, Austria	Short Talk

Friday 21 AUGUST

AS15.2 - Biogeochemical cycles and greenhouse gas dynamics

Chairs:
Chris Greening, Monash University, Australia
Laura Meredith, University of Arizona, United States



14:00 - 16:00

ROOM TE PAEPAE

14:55	Aerotrophy of Methylocapsa gorgona MG08 at sub-atmospheric methane concentrations Oliver Schmidt, The Arctic University of Norway (UiT), Norway	Short Talk
15:00	Independently evolved extracellular electron transfer pathways in ecologically diverse Desulfobacterota Dario R. Shaw, King Abdullah University of Science & Technology, Saudi Arabia	Short Talk
15:05	Integrated multi-omics analysis reveals the presence of two carbon fixation pathways in the thermophilic Actinomycetota Carbonactinospira thermoautotrophica strain StC Sulamita Santos Correa, Embrapa Agrobiology/CNPq, Brazil	Short Talk
15:10	Elevated temperature simulating heatwave-like conditions shifts active nitrifying communities and their associated viruses in tidal flats and agricultural soils Baozhan Wang, Nanjing Agricultural University, China	Short Talk
15:15	Extracellular RNA drives electromethanogenesis in a methanogenic archaeon Rhitu Kotoky, University of Southern Denmark, Denmark	Oral Presentation
15:30	Conserved microbial redox reorganization across landscapes indicates permafrost thaw regime Sophie Jurgensen, Colorado State University, United States	Oral Presentation
15:45	A climate-sensitive chemolithoautotrophic nitrate reduction pathway sustains Antarctic lake ecosystems Shanghai Wu, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, China	Oral Presentation

Friday 21 AUGUST

AS23 - Microbiome-based strategies for climate-smart (/resilient) agriculture

Chair:

Dilfuza Egamberdieva, National University of Uzbekistan, Uzbekistan

Convenor:

Shilpi Sharma, Indian Institute of Technology Delhi, India



ISME20
AUCKLAND

14:00 - 16:00

ROOM 503-505

14:00	<i>Integrated multi-omics and machine learning approaches to identify drivers of soil carbon persistence in agricultural soils</i> Susannah Tringe, Lawrence Berkeley National Laboratory, United States Invited Presentation
14:30	<i>Beauveria, Metarhizium & Co.: how microbiome understanding can support biological pest control</i> Adrian Wolfgang, Graz University of Technology, Austria Oral Presentation
14:45	<i>Biochar combined with electroactive plant growth-promoting bacteria reshapes the rhizosphere microbiome and enhances plant growth</i> Maria Belen Ceretta, CONICET, Argentina Short Talk
14:50	<i>Longitudinal metatranscriptomic analysis reveals temporal adaptation of rumen microbiota under forage and grain diets</i> Le Luo Guan, University of British Columbia, Canada Short Talk
14:55	<i>From osmotic adaptation to ecosystem function: how evolved Bacillus sp. metabolites promote saline soil regeneration</i> Aleksandra Goszcz, University of Warsaw, Poland Short Talk
15:00	<i>Rumen DNA virome dynamics are linked to short-chain fatty acid profiles across productive stages in dairy cows</i> Hugo Monteiro, Cornell University, United States Short Talk
15:05	<i>Functional specialisation and cross kingdom microbial succession in wheat stubble degradation</i> Leela Rizal, CSIRO, Australia Short Talk
15:15	<i>Hypophosphite for microbial methane control in rice fields and ruminants</i> Ruiwen Hu, Lawrence Berkeley National Laboratory, United States Oral Presentation
15:30	<i>The wonderfully complex ecosystem that is pastoral agriculture in Aotearoa New Zealand – microbial issues and opportunities</i> Nigel Bell, Bioeconomy Science Institute, New Zealand Invited Presentation

Friday 21 AUGUST

AS24 - Built environment

Chairs:

Jack Gilbert, University of California, San Diego, United States

Aki Sinkkonen, University of Eastern Finland, Finland



ISME20
AUCKLAND

14:00 - 16:00

ROOM 515

14:00	<i>The Beta-Biodiversity Hypothesis: vegetation heterogeneity, microbial communities, and urban health</i> Nan Hui, Shanghai Jiao Tong University, China Invited Presentation
14:30	<i>Advancing biocontrol strategies to combat antimicrobial resistance in built environments with Bacillus subtilis-embedded living materials</i> Kathleen Furtado, University of California, San Diego, United States Oral Presentation
14:45	<i>From corridors to labs: human use and hygiene regimes reshape indoor microbiomes in everyday buildings</i> Ali Nawaz, University of Siegen, Germany Short Talk
14:50	<i>From indoor bacteriomes to actionable risk control: a BRIGHT Source-Pathway-Sink framework</i> Huan Liu, Chongqing University, China Short Talk
14:55	<i>Graywater's biotic and abiotic features shape the soil microbiomes and impact plant growth</i> Juliet Johnston, Hampshire College, United States Short Talk
15:00	<i>Infrastructure and water storage as determinants of Legionella contamination in low-income urban drinking water systems in Gauteng, South Africa</i> Atheesha Singh, University of Johannesburg, South Africa Short Talk
15:05	<i>Validation of complete ammonia oxidizing Nitrospira and ammonia-oxidizing archaea as nitrifying supplements for aquarium biofilter application</i> Alexander Umbach, University of Waterloo, Canada Short Talk
15:10	<i>Trait-based modeling predicts selection based on growth efficiency in anammox bioreactors</i> Christian White, Argonne National Laboratory, United States Short Talk
15:15	<i>Microbial community assembly in wastewater treatment systems is determined by local natural source communities</i> Sofie Zachø Vestergaard, Aalborg University, Denmark Oral Presentation
15:30	<i>Intervention studies as a tool to promote planetary health in the built environment</i> Aki Sinkkonen, University of Eastern Finland, Finland Invited Presentation

Friday 21 AUGUST

AS26 - Antimicrobial resistance: a One Health perspective

Chairs:

Laura de Nies, University of Oxford, United Kingdom

Md. Tanvir Rahman, Bangladesh Agricultural University, Bangladesh



ISME20
AUCKLAND

14:00 - 16:00

ROOM ARIKI HALL 1

14:00	<i>Genome-wide analysis of extended-spectrum beta-lactamase-producing Escherichia coli from seafood in Bangladesh: population structure, resistome, virulome, and global dissemination patterns</i> Md. Tanvir Rahman, Bangladesh Agricultural University, Bangladesh Invited Presentation
14:30	<i>From One Health surveillance to hotspot prioritisation: integrating multi-omic AMR data across Pacific Island settings</i> Jowenna Sim, Adelaide University, Australia Oral Presentation
14:45	<i>Co-occurrence of blaOXA-1 with blaCTX-M-15 in environmental multi-drug resistant Escherichia coli isolated from Laguna Lake, Philippines</i> Aryana Lee Bertuso, University of the Philippines Diliman, Philippines Short Talk
14:50	<i>Microbiome and mobile antibiotic resistance genes are structured at the level of individual wastewater treatment plants</i> Cecilia Ghiazza, Universidad de la Republica, Uruguay Short Talk
14:55	<i>How antibiotic resistance gene detection tools shape our view of the resistome</i> Juan Inda, Queensland University of Technology, Australia Short Talk
15:00	<i>Microbial interactions can shape the fitness costs associated with antibiotic resistance mutations in Pseudomonas aeruginosa</i> Jack Knowles, Queen's University Belfast, United Kingdom Short Talk
15:05	<i>Ecological and evolutionary dynamics of probiotic-pathogen interactions in a One Health context</i> Ines Mandic-Mulec, University of Ljubljana, Slovenia Short Talk
15:10	<i>Gels vs Germs - using hydrogels to combat nasal biofilms</i> Tori Peters, University of Auckland, New Zealand Short Talk
15:15	<i>From adaptation to coexistence: how redox regimes drive antibiotic responses of facultative anaerobes from pure cultures to synthetic consortia</i> Néstor Sergio Gil Izcara, NTNU, Norway Oral Presentation
15:30	<i>One Health of colistin resistance</i> Yang Wang, China Agricultural University, China Invited Presentation

AS27 - Breaking Barriers: novel techniques for microbial ecology

Chairs:

Michael Wagner, University of Vienna, Austria

Cynthia Whitchurch, Nanyang Technological University, Singapore



ISME20
AUCKLAND

14:00 - 16:00

ROOM 301-302

14:00	<i>CWD-CETSA: exploiting Cell Wall Deficiency and the Cellular Thermal Shift Assay for discovery of novel antibacterial drugs and drug targets</i> Cynthia Whitchurch, Nanyang Technological University, Singapore Invited Presentation
14:30	<i>Breaking the bulk barrier: stimulated Raman spectroscopy imaging and cell sorting enables high-throughput single-cell studies</i> Jacob Schimetz, Montana State University, United States Oral Presentation
14:45	<i>A targeted genetic isolation strategy enables the assembly of a defined anaerobic synthetic consortium</i> Ginevra Giangieri, MIT/DTU, Denmark Short Talk
14:50	<i>Community quantitative stable isotope probing – measuring and scaling the in situ growth of microbial functional groups</i> Satya Kent, Northern Arizona University, United States Short Talk
14:55	<i>Pig gut mucosal phage biomass measurement with fluorescently labelled nanoparticle tracking analysis</i> Baris Erhan Ozdinc, Wageningen University, the Netherlands Short Talk
15:00	<i>Transfer RNA transcripts reveal diel shifts in translational priorities of surface ocean microbial populations</i> Sarah Tucker, Marine Biological Laboratory, United States Short Talk
15:05	<i>Long-range electron transfer regulates spatial metabolic dynamics in biofilms</i> Hiromasa Tongu, University of Tsukuba, Japan Short Talk
15:10	<i>In vivo electrophysiological measurements of long distance electron transport in uncultured cable bacterial cells</i> Tingting Yang, University of Southern California, United States Short Talk
15:15	<i>Reversible fixation of microbial cells for targeted genomics</i> Pam Engelberts, Queensland University of Technology, Australia Oral Presentation
15:30	<i>Activity targeted stable isotope probing metaproteomics to characterize slow-growing microbes central to anaerobic community metabolism</i> Ryan Ziels, University of British Columbia, Canada Invited Presentation

Friday 21 AUGUST

AS28 - Microbial consortia – natural to synthetic

Chair:
Mengcen Wang, Zhejiang University, China



14:00 - 16:00

ROOM 303-305

14:00	<i>Metabolic reprogramming during disease drives phyllosphere microbiome assembly</i> Paulo Teixeira, University of São Paulo, Brazil Invited Presentation
14:30	<i>Unveiling bacterial interactions and global warming responses of synthetic communities from the Cuatro Ciénegas Basin</i> Natalia Said Muñoz, Universidad Nacional Autónoma de México, Mexico Oral Presentation
14:45	<i>Ecological drivers of function and stability in synthetic microbial consortia</i> Juan Molina Ortiz, CSIRO, Australia Short Talk
14:50	<i>How can a foliar microbiota impact a phytopathogen in planta: a Pseudomonas syringae and Arabidopsis story</i> Gaële Lajeunesse, Université de Sherbrooke, Canada Short Talk
14:55	<i>Multidimensional stability of synthetic consortia with defined ecological interactions under antibiotic perturbation</i> Shuyao Li, Zhengzhou University, China Short Talk
15:00	<i>Synthetic microbial communities shape Arabidopsis life history across abiotic stress</i> Joaquin Lopez, University of California, Irvine, United States Short Talk
15:05	<i>From native microbial communities to synthetic design: a machine learning framework for hexavalent chromium bioremediation</i> Adriana Torres Ballesteros, Rothamsted Research, United Kingdom Short Talk
15:15	<i>Balancing competition and cross-protection: determinants of stability in synthetic microbial communities</i> Fran Gilis, KU Leuven, Belgium Oral Presentation
15:30	<i>Strain-resolved metaproteomics enables untangling functional redundancy in taxonomically-related constructed microbial communities</i> Robert Hettich, Oak Ridge National Laboratory, United States Invited Presentation

Friday 21 AUGUST

AS29 - Invisible Allies: the role of microbes in biodiversity conservation

Chairs:
Madeleine van Oppen, The University of Melbourne, Australia
Elin Videvall, Uppsala University, Sweden



14:00 - 16:00

ROOM TE WHARAU

14:00	<i>The use of heat-evolved photosymbionts to enhance coral climate resilience and safeguard reef futures</i> Madeleine van Oppen, The University of Melbourne, Australia Invited Presentation
14:30	<i>Microbiome recovery and plant associations across land-use scenarios after wildfire</i> Maite Ortúzar, Sun Yat-sen University, China Oral Presentation
14:45	<i>Spatio-temporal variation in the gut microbiota of wild and captive wolverines (Gulo gulo)</i> Charlotte Enkvist, Uppsala University, Sweden Short Talk
14:50	<i>Exploring the role of root-associated microbes to improve seagrass restoration science</i> MJ Herrin, University of British Columbia, Canada Short Talk
14:55	<i>Harnessing microbial inducers of coral larval settlement for reef restoration</i> Laura Rix, The University of Queensland, Australia Short Talk
15:00	<i>Rhizosphere probiotic consortia as microbial allies for mangrove conservation and blue carbon sequestration</i> Phillipe Rosado, Federal University of Rio de Janeiro, Brazil Short Talk
15:05	<i>Rewriting thermal limits: microbiome manipulation shifts tipping point of seagrasses</i> Sujatha Srinivas, Singapore Centre for Environmental Life Sciences Engineering (SCELE), Nanyang Technological University, Singapore Short Talk
15:10	<i>Microbial parasols for hot seas: Flavobacterial myxol protects coral algal symbionts from thermal stress</i> Toshiyuki Takagi, The University of Tokyo, Japan Short Talk
15:15	<i>Large scale culturing and microbiome engineering enable pathogen suppression in oak trees</i> Alejandra Ordonez, University of Birmingham, United Kingdom Oral Presentation
15:30	<i>Dietary niche partitioning and gut microbiomes among threatened ungulates in the desert ecosystems of northwestern China</i> Zhichao Zhou, Beijing Forestry University, China Invited Presentation

Friday 21 AUGUST

Closing Ceremony

Chair:
Raquel Peixoto, ISME President



16:05 - 17:50

ROOM TE PAEPAE

16:05 **Plenary session**
Chair: **Gabriele Berg**, Graz University of Technology, Austria

Beginning a partnership and keeping it faithful: lessons from the squid-vibrio symbiosis
Margaret McFall-Ngai, Caltech/Carnegie, United States



Margaret McFall-Ngai
Carnegie Science and CalTech
United States

Margaret McFall-Ngai is currently a Staff Researcher at Carnegie Science and a Faculty Associate at CalTech. Her research focuses on integrating diverse fields of biology, from molecular biology to ecology, to tackle pressing issues such as climate change and sustainability. Her lab is located at the California Institute of Technology where she is also a Faculty Associate. Prior to her current position, Margaret McFall-Ngai was a professor at the University of Hawai'i-Mānoa and has also held tenured positions at the University of Southern California and the University of Wisconsin-Madison. Her research laboratory studies two areas: (i) the role of beneficial bacteria in health using the squid-vibrio model; and (ii) the biochemical and molecular 'design' of tissues that interact with light.

16:50 ***Presentation of the Poster Awards, DC White Poster Award and the Tom Brock Awards***
Raquel Peixoto, ISME President

17:10 ***Invitation to attend ISME21 in Canada***
Steven Hallam, University of British Columbia, Canada

17:25 ***Address by outgoing ISME President***
Raquel Peixoto, KAUST, Saudi Arabia

17:35 ***Incoming ISME President's Address***
Gabriele Berg, Graz University of Technology, Austria

17:45 ***Announcement ISME22***

End of Meeting