



EDAR8

Environmental Dimensions
of Antimicrobial Resistance
Brisbane, 2-7 August 2026

DRAFT Presentations Program

EDAR8 Monday 3 August

Page 1 of 8 | 3 July 26

Time	Title	Speaker	Country
10:30am - 11:30am	OPENING CEREMONY > Opening > Welcome to Country > Opening Address > Opening Address > Progress and Frontiers: Global action to integrate the environmental dimensions of antimicrobial resistance into One Health AMR > A First Nations perspective on One Health and AMR > Progressing One Health AMR in Australia	EDAR8 Co-Chairs The Hon. Karlene Maywald TBA UNEP Dr Tamara Riley Australian CDC TBA	Australia, France Australia TBA Multinational Australia Australia
11:30am - 1:00pm	PLENARY SESSION: Establishing the need for action and the nature of the challenge > Global AMR in 2026 - an infectious diseases perspective > Control of antimicrobial resistance in agrifood systems: The gen(i)e is out of the bottle > A European perspective on antimicrobial resistance in the food chain: Integrating monitoring and risk assessment for regulatory science > One Health surveillance of AMR > The hidden resistome at the plant-soil interface: How mobile genes and co-selection challenge AMR surveillance	Norelle Sherry Jeffrey Lejeune Ernesto Liebana Windi Muziasari Sasha Tetu	Australia Italy Italy Finland Australia
1:00pm - 2:00pm	LUNCH		
2:00pm - 4:00pm	PLENARY SESSION: Environmental AMR frontiers > A One Health framework for global and local stewardship across the antimicrobial lifecycle > Antimicrobial resistance across the hydrologic cycle: Research needed to reduce AMR evolution, transmission and spread in the environment > Turning the tide: Reducing antibiotic resistance in aquatic food systems > Operationalizing One Health for AMR control: A tiered framework to strengthen environmental sector engagement in the Philippines > A One Health perspective on controlling fungal diseases and AMR	Sabiha Essack David Graham Andrew Barnes Geminn Louis Apostol Bart Fraaije	South Africa United Kingdom Australia Philippines The Netherlands

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9:00am - 10:30am	PLENARY SESSION: From One Health impetus to action > Antimicrobial resistance: Ecology, evolution and environmental risk assessment > EMANS to 2028 and beyond – Europe's regulatory strategic plan to tackle AMR based on an interlinked One Health approach > EU-JAMRAI 2: Creating a Community of Practice to address the environmental dimension of antimicrobial resistance across the EU > EU JAMRAI 2: Determining priority core elements for environmental AMR surveillance in Europe > 10 years of experience with wastewater surveillance of antibiotic resistance in The Netherlands	Aimee Murray Thomas Heberer Ane Laburu-Dañobeitia Roosmarijn Luiken Heike Schmitt	United Kingdom Germany Spain The Netherlands The Netherlands
11:00am - 1:00pm	CONCURRENT SESSION: Wastewater (One Health) surveillance and AMR > City-scale shotgun metagenomic surveillance of antimicrobial resistance across a sewage network including urban, hospital, and airport wastewater in Larnaca, Cyprus > Is surface water a good proxy for phenotypic antimicrobial resistance in healthcare facilities and informal settlement residents in developing countries? > Effect of urbanization on antimicrobial resistance genes carried by human populations - metagenomic analysis of an international transect of wastewaters > Retrospective wastewater surveillance reveals COVID-19 pandemic-driven shifts in community-level AMR profiles in Japan > Disentangling signal contributions from hospital biofilms to wastewater-based surveillance of antimicrobial resistance > Wastewater analysis to identify associations between chemical, demographic and socioeconomic drivers of antimicrobial resistance > Longitudinal wastewater-based surveillance reveals increased antimicrobial resistance in shelters for unhoused individuals relative to general populations > From burden to dynamics: allele-resolved wastewater surveillance reveals hidden AMR structure > Comprehensive evaluation in Africa and Europe supports wastewater monitoring for assessing antibiotic resistance prevalence in clinical isolates > Wastewater surveillance reveals insights into antibiotic resistance across the United States	Andrea Naziri Luther King Abia Akebe Peter Vikesland Miaomiao Liu Amanda Darling Jake O'Brien Shaelyn Xu Tristan Nolan Carl-Fredrik Flach Sooyeol Kim	Cyprus South Africa USA Japan USA Australia Canada Australia Sweden USA
11:00am - 1:00pm	CONCURRENT SESSION: Environmental drivers, transmission and impacts of AMR in food production systems > The global surface water resistome in transition: sources, risks and drivers > The SeaBOS keystone project on AMR: A quantitative resistance gene monitoring program for aquaculture systems > Mussels as natural biofilters: Experimental and shotgun metagenomic analysis of extracellular DNA-mediated accumulation of antimicrobial resistance from the marine environment > Quantitative modelling and qualitative traits of the allochthonous enteric microbiome, resistome and mobilome during manure fertilization of agricultural soils > Plasmid-mediated antibiotic resistance in flooded and non-flooded agricultural soils > Influence of agricultural intensification on microbial communities, resistomes, and mobilomes across 5000 years of Finnish agricultural history > Quantitative assessment of selective pressure driving antimicrobial resistance in dairy farm environments > A novel risk assessment framework to address antimicrobial resistance in the Australian vegetable supply chain > Phenotypic and genomic analysis of antibiotic resistance in pathogenic <i>Enterobacteriaceae</i> isolates from leafy vegetables > Honeybees as xenosurveillance agents for antimicrobial resistance sampling in agricultural environments	Xun Qian Oskar Nyberg Stefano Dalle Palle Marios I. Valmas Eva Kilcoyne Minna Maunula Arianna Peruzzo Barbara Drigo Min Qiao Anel Toledo Nauto	China Sweden Italy Greece Ireland Finland Italy Australia China USA

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11:00am - 1:00pm	CONCURRENT SESSION: From environmental AMR data to decisions > Infrastructures to monitor future AMR threats > When methods disagree: Evaluating concordance among environmental AMR monitoring approaches > Advancing regulatory-ready microbial endpoints for AMR risk assessment of chemicals under Australian and New Zealand water quality guideline frameworks > The impact of climate change on antimicrobial resistance > Bayesian modelling to support water utilities in managing antimicrobial resistance risks > A unified framework for antimicrobial resistance evidence integration > AMRIA representative > Panel discussion: Regulatory science and environmental AMR	Johan Bengtsson-Palme Marcus Wenne Monique Binet & Tony Bigwood Cara Patel Claire Hayward Cai Chen Andreas Häner TBC	Sweden Sweden Australia UK Australia China Multinational

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9:00am - 10:30am	PLENARY SESSION: Environmental AMR hotspots, reservoirs, transmission and exposure pathways > Antimicrobial resistance (AMR) in soil-plant systems > Microbial resilience vs. AMR persistence: Elucidating the outcomes of wastewater-soil coalescence > Environmental dissemination and mitigation of antibiotic resistance genes in Brazilian aquatic systems: Insights from the Pantanal wetland and arsenic-impacted tropical streams > The great plastisphere reef: Microplastics as a novel niche for antimicrobial resistant pathogens > Tracking plasmid-mediated antibiotic resistance from hospitals to wastewater via plasmid systems > Environmental bacteria as vectors for the cross border transport of antimicrobial resistance: A multi-omics characterization	Yong-Guan Zhu Eddie Cytryn Juliana Calabria de Araújo Emily Stevenson Meghana Srinivas Changzhi Wang	China Israel Brazil United Kingdom Ireland Saudi Arabia
11:00am - 1:00pm	CONCURRENT SESSION: Ecology and biology of Environmental AMR > When anthropogenic and river microbiomes collide: Who wins, who loses, what drives the spread of antimicrobial resistance? > Predicting the environmental persistence of invading antibiotic-resistant bacteria in freshwater biofilms > Antiviral defense systems drive persistence but limit the transfer of antimicrobial resistance genes in anaerobic digestion > Identification of metabolic niches and their association with the persistence of antibiotic resistant bacteria in wastewater > Redox oscillation frequency regulates the evolutionary mode of antibiotic resistance via transcription-coupled repair > H₂S drives the dissemination of plasmid-borne antibiotic resistance genes via the hijacking of intracellular glutamine > Inter-plasmid transfer of antibiotic resistance genes accelerates antibiotic resistance in bacterial pathogens > Characterisation of bacterial vesicle-mediated extended spectrum β-lactamase plasmid transfer and implications for AMR dissemination in reclaimed water > Ecological differentiation and transfer potential of IncP/P-1 plasmid subgroups > Conjugation dynamics of wastewater-derived multidrug-resistant <i>Escherichia coli</i> reveal an overlooked dimension of AMR risk	Christophe Merlin Uli Klümper Junya Zhang Orestis Kanaris Naresh Singhal Haining Huang Xiaolong Wang Stavri Karasiali Maho Tokuda Kseniia Erokhina	France Germany China Germany New Zealand China China Cyprus Japan Israel
11:00am - 1:00pm	CONCURRENT SESSION: Environmental AMR and wildlife / animal health > Invited speaker/s TBA > Global health risks lurking in livestock resistomes > Assessing the effectiveness of regulative interventions on AMR reduction in dairies > Genetic differences and plasmid-mediated antibiotic resistance in persistent <i>Staphylococcal</i> intramammary infections of dairy cows over the dry period > Strengthening environmental AMR surveillance in food animal production systems: Development of operational guidelines for national programs > Deciphering the formation dynamics and transmission driving mechanisms of antibiotic resistance in animal farming environments > Discontinuity between AMR in clinical populations and local wildlife: Insights from the <i>Enterobacteriaceae</i> > Anthropogenic land use exerts selection pressures on the resistome of a wild rodent	TBA Xun Qian Sunny Jiang Jennifer Ronholm Muhammad Usman Zaheer Bing Li Bethany Hoye V́ctor Hugo Jarquín-Díaz	TBA China USA Canada Thailand China Australia Germany

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11:00am - 1:00pm	CONCURRENT SESSION 3: Understanding AMR in the water cycle		
	> Fate of clinically relevant antibiotic resistant gram negative bacteria from sewershed to watershed and comparison with regional clinical isolates	Thomas Byrne	USA
	> Gene-level insights into antimicrobial resistance distribution and machine-learning modeling in tropical Coastal waters	Zhixin Xiang	Singapore
	> Antimicrobial resistance and coliform bloom dynamics in a drinking water reservoir	Gabriel Mesole	USA
	> The U.S. wastewater resistome: Seasonal, regional, and treatment dynamics	Tala Navab-Daneshmand	USA
	> Spatial and temporal dynamics of antimicrobial resistant bacteria in a tertiary wastewater treatment plant using composite and passive sampling methods	Claire Ellison	Canada
	> Surveillance of antibiotic resistance genes in the phage fraction and phage-mediated transduction in wastewater and river ecosystems	Silvia Monteiro	Portugal
	> Deciphering antimicrobial resistance mobilised in the aquatic plastisphere	Shu-le Li	China
	> Impact of residual disinfection on antibiotic resistance genes in drinking water distribution system biofilms following a worst-case sewage contamination event	Sam Walsh	UK
	> Chlorine disinfection drives evolutionary dynamics of antibiotic resistance in waterborne pathogens	Zhigang Yu	Australia

Time	Title	Speaker	Country
9:00am - 10:30am	CONCURRENT SESSION: AMR omics, informatics, and advanced analytics > Can we predict the transfer routes of mobile antibiotic resistance genes? > New sequence barcode system allows tracking horizontal gene transfer from multiple origins simultaneously > Quantitative metagenomic sequencing using whole-cell spikes for environmental resistome analysis > MobiGLM: An augmented genomic language model enabling mobility-tiered risk stratification for antibiotic resistance genes in environmental surveillance > Antibiotic resistance gene carriers in complex wastewater communities revealed by a novel methylation-based approach > Multimodal machine learning prediction of chemical synergy and antagonism for environmental antimicrobial resistance risk assessment > ARGContextProfiler: Extracting and scoring the genomic contexts of antibiotic resistance genes using assembly graphs	Erik Kristiansson Marko Virta Madeline Deck Changzhi Wang Antti Karkman Ji Lu Liqing Zhang	Sweden Finland Switzerland Saudi Arabia Finland Australia USA
9:00am - 10:30am	CONCURRENT SESSION: One Water, One Health and AMR > Wastewater biological treatment levers to control antibiotic resistance at full scale > Does recreational inland water exposure increase the risk of faecal carriage of antimicrobial resistant bacteria? > Evaluation of UV-C and UV/H₂O₂ tertiary treatments for controlling bacterial vesicle-mediated horizontal gene transfer > Flux balance identifies post-denitrification units as reservoir and secondary source of beta-lactam resistance genes in wastewater treatment plants > Eukaryotic predation drives the dissipation of microbial and antibiotic resistance loads during effluent storage > Revealing keystone bacteria in the One Health network: a data-driven insight into antibiotic resistance spread > Removal of antimicrobial resistance in hospital wastewater by ozonation: Metagenomic analysis of residual microbial community and antibiotic resistance genes > Removal of intracellular and extracellular ARGs in waste stabilization ponds: Evidence from full-scale monitoring and bench-scale tests	Celia Manaia William Gaze Andrea Naziri Zhiguo Su Liguan Li Marina Andreu Pazos Dongbeom Im Iftita Rahmatika	Portugal UK Cyprus Denmark China France Japan Indonesia
11:00am - 1:00pm	CONCURRENT SESSION: Technologies, environmental engineering, diagnostics and devices > Invited speaker/s TBA > Evaluating advanced WWTP techniques for antibiotic resistance removal: A full-scale study > From lab to farm: Plasma-activated water as a chemical-free egg washing technology for AMR mitigation > Rapid quantification of multiple resistance and resistance mobility in environmental samples > Elevated antimicrobial resistance in <i>Escherichia coli</i> in CAFO-impacted waters in California, Michigan, and Wisconsin: Modified kits correlate with standard methods > A field-deployable recombinase polymerase amplification (RPA) - CRISPR lateral flow diagnostic platform for on-site AMR monitoring > Evaluation of a low-cost active air sampler for capturing airborne antibiotic resistance genes: A wastewater treatment plant case study	TBA Bas Van Der Zaan Tania Veltman David Kneis Jennifer Jay Nijoy John Naixiang Zhai	TBA The Netherlands Australia Germany USA Australia Australia

Time	Title	Speaker	Country
11:00am - 1:00pm	CONCURRENT SESSION: Advances in AMR risk assessment (incl. S4.3A prep talks) > Assessing AMR risks linking next generation Quantitative Microbial Risk Assessment (QMRA) and spatial modeling in water and wastewater applications > Integrating experimental conjugation, growth, and plasmid loss rates into dynamic models and risk assessment of wastewater-derived multidrug-resistant <i>E. coli</i> > A multi-criteria framework for assessing antimicrobial resistance risks across tropical aquatic environments > Simulating environment to community AMR transfer using a stochastic SIRS model > Moving beyond indicators and prioritization of AMR determinants: Demonstrations of environmental hotspots and their AMR vectors > Title TBA	Kerry Hamilton Hunter Quon Qiyi Yuan David Roser Nick Ashbolt Amy Pruden	USA USA Singapore Australia Australia USA
11:00am - 1:00pm	CONCURRENT SESSION: A One Health perspective on antifungal / fungicide resistance (Emerging Topic) > New tools for AMR surveillance: From agriculture to One Health > The link between the use of azoles in non-medical applications and the spread of azole fungicide resistance in <i>Aspergillus</i> fungi > Predicting antifungal concentrations that select for resistance: An enhanced approach to establish environmental thresholds > Monitoring the frequency of fungicide resistant <i>Botrytis cinerea</i> in grapevine after selective removal of chemistries > From field diagnostics to novel solutions for fungicide resistance > Coupling airborne spore trapping and molecular diagnostics to monitor fungicide resistance > Persistence and fitness costs of fungicide resistance in grapevine mildews > Environmental, ecological and evolutionary drivers of azole-resistant <i>Aspergillus fumigatus</i> in the UK > Panel discussion: Knowledge transfer for researchers engaging in environmental surveillance for One Health research applications; and cross-sectoral challenges and opportunities for One Health fungicide resistance and stewardship	Fran Lopez Ruiz Frank Schreiber Isobel Stanton Lincoln Harper Joel Haywood Ismail Ahmed Ismail Cian Hoban Rachel Payne TBA	Australia Germany UK Australia Australia Australia Australia UK TBA
11:00am - 1:00pm	CONCURRENT SESSION: One Health AMR genomic epidemiology and surveillance > Title TBA > Genomic assessment of horizontal transfers of antibiotic resistance genes across bacterial taxa > Systematic One Health <i>E. coli</i> surveillance across environmental, animal and clinical sectors > Ecological connectivity of genomic markers of antimicrobial resistance in <i>Escherichia coli</i> in Hong Kong > Genomic research and development initiative - a review of accomplishments of a One Health AMR program > Host-associated antimicrobial resistance dynamics in wastewater treatment revealed by single-cell genomics > EMAR Fiji: A program of deep sampling and bacterial whole-genome sequencing to understand antimicrobial resistance in Fiji > Recycled water as an environmental interface for antimicrobial resistance: Genomic hazard profiling of <i>Escherichia coli</i> > Conjugative IncF, IncI, and IncB/O/K/Z plasmids in <i>Escherichia coli</i> carrying blaCTX-M-15 are widespread across European aquatic environments > A One Health surveillance system on ESBL-producing <i>Escherichia coli</i> in an agricultural watershed > Taxonomic, geographic, and horizontal gene transfer assessment of clinical, environmental, animal, and food isolates expressing blaIMP-27 and blaIMP-64 carbapenemase genes	Steven Djordjevic Nicolas Godron Veronica Jarocki Xiaoqing Xu Tim McAllister Mardalisa Ethan Wyrsh Dewa Ayu Putu Annie Justh De Neczpal Xu Li Susan Vaughn	Australia France Australia China Canada Indonesia Australia Australia Sweden USA USA

Time	Title	Speaker	Country
9:00am - 10:30am	CONCURRENT SESSION: Public health interventions / AMS / waste management > Resistome surveillance as infrastructure science: building a One Health framework for environmental antimicrobial resistance monitoring > Environmental selection of AMR in healthcare wastewater: Mechanisms, mobility, and public health implications > Monitoring of antimicrobial resistant faecal indicator bacteria in urban aquatic environments > Early childhood exposure to antimicrobial-resistant organisms: environmental exposure pathways and household-level drivers in peri-urban Malawi > Environmental perturbations alter mobility and risk of clinically relevant ARGs: lessons from an in vitro gut reactor > Antimicrobial resistance awareness and One Health understanding among dental students in Quebec > Public handwashing stations as reservoirs of extreme multidrug-resistant <i>Staphylococcus spp.</i>: A One Health challenge in post-pandemic São Paulo, Brazil > A One Health approach to antimicrobial stewardship: Lessons learned from ten years of the National Centre for Antimicrobial Stewardship > National-scale decoupling of pathogen risk and resistome in household drinking water	Ulf Dahle Rietie Venter Qiyl Yuan Emma Budden Fathima Afsal Belinda Nicolau Maria Tereza Pepe Razzolini Lisa Hall Peng Shi	Norway Australia Singapore USA Canada Canada Brazil Australia China
9:00am - 10:30am	CONCURRENT SESSION: Frontiers in environmental chemistry and AMR > Chemical mixtures and physicochemical conditions in wastewater treatment plants as non-antibiotic drivers of antimicrobial resistance > Widespread on-site selection of antibiotic-resistant <i>E. coli</i> within hospital sewers driven by ciprofloxacin and β-lactams > A new method for prioritising aquatic pollutants that may select for antimicrobial resistance, using rationale from antibiotic drug design > How metals and microplastics contribute to AMR in refugee camps and conflict settings: From molecular mechanisms to policy implications > Like parent, like metabolite: Antibiotic transformation products exert selective pressure for antimicrobial resistance comparable to parent compounds	Diana Aga D. G. Joakim Larsson Emma Louise Rossiter Muhammad Zaman Pooja Lakhey	USA Sweden UK USA Australia
11:00am - 12:30pm	CLOSING PLENARY SESSION > Title TBA > Title TBA > EDAR: Where have we been, where are we going? > EDAR8 Awards > EDAR9 Announcement	Jason Snape Pauline Sameshima Ed Topp Former EDAR Chairs Wait and see...	United Kingdom Canada France Multinational Home of EDAR9