

Sunday 18 Sept 2022	
from 14:30	Registration
18:00- 18:30	Opening remarks Konstantinos Vorgias and Melina Kerou
	Opening lectures Chair: Christa Schleper
18:30-19:00	KL1 Haruyuki Atomi (JPN): The pentose bisphosphate pathway and related enzymes and pathways in Archaea
19:00-19:30	KL2 Bettina Siebers (GER): Adaptation to high temperature from a metabolic point of view
19:30-20:00	KL3 Nikos Kyrpidis (USA): Microbiome Data Science: from the Earth Microbiome to the Global Virome
20:30	Welcome reception

Monday 19 Sept 2022	
	SESSION 1: Microbial defense systems Chair: Zvi Kelman
09:00 - 09:30	KL4 Malcolm White (UK): Cyclic nucleotide signalling in prokaryotic virus:host conflict
09:30-10:00	KL5 Michael Terns (USA): Archaeal histones specify the site of foreign DNA integration at CRISPR loci
10:00-10:30	KL6 Erika Wimmer (AT): Compelling cellular reactions of <i>Saccharolobus solfataricus</i> upon deletion of a type III CRISPR-Cas system
10:30 - 11:00	Coffee and networking
11:00-12:00	SESSION 3: Information Processing systems and Microbial defense Chairs: Isabelle Zink, Malcolm White
	OS1 Elin Moe (PRT): Functional analysis and structure prediction of DNA polymerase I from the extremophile <i>Deinococcus radiodurans</i>
	OS2 Thomas Santangelo (USA): The structure and activities of the archaeal transcription termination factor Eta detail vulnerabilities of the transcription elongation complex
	OS3 Isabelle Zink (NL): Argonaute tinder: Searching for protein partners of Argonautes from hyperthermophilic Archaea for functional and applied studies
	OS4 José Berenguer (ESP): Barriers against extracellular DNA in <i>Thermus thermophilus</i>
12:00-13:00	SESSION 2: Microbial physiology Chair: Bettina Siebers
	KL7 Peter Schönheit (GER): New views on an old Enzyme: Allosteric regulation and evolution of archaeal pyruvate kinases.
	KL8 Volker Müller (GER): Electrons in the fast lane: Membrane-anchored HDCR nanowires drive hydrogen-powered CO ₂ fixation
13:00-14:30	Lunch and networking
14:30-15:30	SESSION 4a: Metabolism and Physiology of Extremophiles (I) Chairs: Célia Romão, Michael Adams
	OS5 Giuliana d'Ippolito (ITA): Capnophilic Lactic Fermentation (CLF) pathway in the anaerobic hyperthermophilic bacteria of the family Thermotogaceae: occurrence and regulation
	OS6 Svenja Höfmann (GER): Polyphosphate metabolism in the thermoacidophilic Crenarchaeon <i>Sulfolobus acidocaldarius</i>
	OS7 Mruthyunjay Kubendran Sumathi (USA): Metabolic dependent growth behavior of <i>Thermococcus kodakarensis</i>
	OS8 Mauro di Fenza (ITA): EXTREMOPHILES ARE SET TO PLAY A VALUABLE ROLE IN THE EUROPEAN DISTRIBUTED RESEARCH INFRASTRUCTURE (IBISBA)
15:30-18:00	Poster session with coffee and refreshments (odd numbers)
18:00-19:00	SESSION 5a: Metabolism and Physiology of Extremophiles (II) Chairs: Beate Averhoff, Peter Schönheit
	OS13 Frank Robb (USA): Novel Chaperonin from the thermophilic Thaumarchaeote <i>Nitrosocaldus cavascurensis</i> : Recombinant expression and functional characterization
	OS14 Angela Casillo (ITA): The acetyl-rich capsular polysaccharide isolated from the vesiculating psychrotolerant bacterium <i>Shewanella vesiculosa</i> HM13
	OS15 Duncan McMillan (NL): The Evolution of Environmental Adaptation in ATP synthases: From Extremophiles and Parasites to Mammals
	OS16 Eunhye Jo (KOR): Transcriptome Analysis of Halotolerant <i>Staphylococcus saprophyticus</i> Isolated from Korean Fermented Shrimp
19:00	Free evening / meeting of ISE

	SESSION 4b: Biotechnology of Extremophiles: Current Uses and Prospects (I): Jennifer Littlechild, Ermenegilda Parrilli
	OS9 Ryan Bing (USA): Leveraging Extreme Thermophily for Enhanced Plant Biomass Conversion to Bio-based Chemicals and Fuels
	OS10 Anja Černoša (SLO): Plastic degradation potential of extremotolerant fungi screened by a novel method
	OS11 Simone De Rose (UK): Using <i>Thermus thermophilus</i> as a Whole-Cell Factory: Production of extremolytes
	OS12 Anna Florentino (NL): Elemental Sulfur Disproportionation: Overcoming Energetic Barriers for Biotechnological Application
	SESSION 5b: Sustainable solutions and processes Chair: Melina Kerou
	OS17 Scott Hamilton-Brehm (USA): Recruiting deep subsurface microbiomes to sustainably sequester carbon
	OS18 Şeymanur Ersoy (TUR): Metagenomic Microbial Community Analysis of Hydrogen Producer Thermophilic Strains of Local Hot Springs with Nanopore Sequencing
	OS19 Ram Karan (SA): Poly-extreme environments: Promising sources of novel enzymes for sustainability

Tuesday 20 Sept 2022	
09:00 - 13:30	Excursion to Archaeological site Mycenae
13:30 - 15:00	Lunch and group photo
	SESSION 6a: Genomics, Metagenomics, Proteomics and Culturomics for Extremophiles (I) Chairs: Eveline Peeters, Hari Atomi
15:00 - 16:00	OS20 Antonio Ventosa (ESP): Metagenomics-based culturomics of hypersaline habitats
	OS21 Favreau Charly (FRA): Toolbox for molecular acclimatization of haloarchaea within salt crystal // Talk given by Adrienne Kish
	OS22 Elizabeth Watkin (AUS): Evolutionary pathway of Acidihalobacter Efrom a halophile to an acidihalophile
	OS23 Daniele Daffonchio (SAU): A novel phylum with multiple metabolisms along the halocline of deep anoxic brine pools in the Red Sea
16:00-16:30	Coffee and networking
16:30 - 17:30	SESSION 7a: Genomics, Metagenomics, Proteomics and Culturomics for Extremophiles (II) Chairs: Bettina Siebers, Anna Florentino
	OS28 Eveline Peeters (BEL): A system-level perspective on heat shock response in Sulfolobus acidocaldarius
	OS29 Sreejith Jayasree Varma (GER): A platform for identifying functions associated with unannotated proteins in Sulfolobus acidocaldarius
	OS30 Alejandra Recalde (GER): Novel proteins involved in the UV-stress response of Sulfolobus acidocaldarius
	OS31 Zackary Jay (USA): Geochemical forcing causes extensive functional diversity in an abundant (hyper)thermophilic archaeon in Yellowstone National Park
	SESSION 6b: Biotechnology of Extremophiles: Current Uses and Prospects (II) Chairs: Giuliana d'Ippolito, Cristina Purcarea
	OS24 Laura Nissen (GER): Purification of heterologously-produced aldehyde:ferredoxin oxidoreductase (AOR) from Thermoanaerobacter sp. strain X514
	OS25 Adorjan Cristea (ROU): Turning blue: suboptimal temperature triggers the synthesis of dark-blue pigment in the moderately halophilic Chromohalobacter marismortui
	OS26 Parrilli Ermenegilda (ITA): Anti-biofilm and anti-adhesive molecules from Antarctic marine bacteria
	OS27 Perugino Giuseppe (ITA): Pushing protein-tags on the boundaries: new thermostable tools for expanding biotechnological applications
16:00-16:30	Coffee and networking
16:30 - 17:30	SESSION 7b: Biotechnology of Extremophiles: Current Uses and Prospects (III) Chairs: Daniela Monti, Marco Moracci
	OS32 Andrea Strazzulli (ITA): CAZyme discovery from geothermal environments for biotechnological applications
	OS33 Andrea Rodriguez-Sanz (ESP): Extremozymes for xylan-derived products production
	OS34 Sunita Borkar (IND): Production, optimization and partial characterization of alkali-stable alpha amylases from Alkalihalobacillus sp. strains SB-D and SB-W
	OS35 Samiullah Khan (PAK): Cloning, Biochemical characterization and comparison of active site mutations at subsite +2 of Anoxybacillus ayderensis A9 Beta-glucosidase for hydrolysis of pNPG and polydatin
	Break
18:00-19:00	SESSION 8 Microbial Communities & Microbial Ecology at Extreme Conditions (I): Polar and alpine environments Chairs: Don Cowan, Fabiana Canini
	OS36 Linda Nedbalová (CZE): Polar microalgae: Ecophysiological diversity and their potential for low-temperature biotechnology
	OS37 Angelina Cordone (ITA): Bacterioplankton community structure crossing the Antarctic Circumpolar Current Fronts
	OS38 Fabiana Canini (ITA): Influence of rocks colonization on bacterial diversity in soils of Antarctic deserts
	OS39 Lenka Prochazkova (CZE): Application of metagenomics on microeukaryotes living in melting alpine and polar snow
19:00	Free evening

Wednesday 21 Sept 2022

	SESSION 9 Cellular Biology & Evolutionary considerations Chair: Helena Santos, Jose Berenguer	
09:00 - 10:30	KL9 Shiladitya DasSarma (USA): Comparative genomics and physiological capabilities of Haloarchaea	
	KL10 Sonja Albers (GER): New players in FtsZ-based cell division in archaea	
	KL11 Mirko Basen (GER): Tracing the Origins of Life? Laboratory evolution of a thermophile towards a lower growth temperature	
10:30 - 11:00	Coffee and networking	
11:00-12:30	SESSION 10: Deep Subsurface Environments and Piezophiles Chairs: Anaïs Cario, Panos Adam	
11:00-11:30	KL12 Christa Schleper (AT): Actin-based cytoskeleton and complex cell architecture in an Asgard Archaeon	
11:30-12:30	OS40 Peter Fischer (NL): Methylophony in the deep: metagenomics and physiology of microbial enrichments from Black Sea sediments	
	OS41 Sergey Gavrilov (RUS): Proterozoic Park: Microbial communities of subsurface mineral waters mirror the earth's ancient biosphere	
	OS42 Nicolo Ivanovich (SGP): From the surface to the bottom of the ocean: a novel instrument to investigate the effect of hydrostatic pressure on microbially influenced corrosion	
	OS43 Samuel Marre (FRA): Deep underground microorganisms for CO2 subsurface recycling	
13:00-14:30	Lunch and networking	
14:30-15:30	SESSION 11a: Microbial Communities & Microbial Ecology at Extreme Conditions (II): Hydrothermal environments Chairs: Olga Golyshina, Andreea Baricz	SESSION 11b: Metabolism and Physiology of Extremophiles (III): Mechanisms of environmental stress resistance Chairs: Sonja Albers, Mirko Basen
	OS44 Ema Kostešić (HRV): Visualization and identification of metabolically active microbial populations in hot spring biofilm	OS48 Priya DasSarma (USA): Haloarchaeal survival under ionizing radiation and Stratospheric conditions
	OS45 Bernardo Barosa (ITA): Shallow-water hydrothermal vents of Italy as windows to the relationships between the Geosphere and Biosphere	OS49 Masahiro Ito (JPN): Cs+ tolerance mechanisms of high-concentration Cs+ tolerance bacterium alkaliphilic Microbacterium sp. TS-1
	OS46 Costantino Vetriani (USA): Composition and function of metabolically active chemosynthetic microbial biofilms at deep-sea hydrothermal vents	OS50 Takayuki Ohira (JPN): Reversible RNA phosphorylation stabilizes tRNA for cellular thermotolerance
	OS47 Anastasia Galani (NL): Exploring the carboxydrotrophic potential of microbial communities in hydrothermal areas	OS51 Célia V. Romão (PRT): Bacterial nano-compartments from the radiation resistant bacterium, Deinococcus radiodurans, their function in the cellular response against stress
16:00-18:00	Poster session with coffee and refreshments (even numbers)	
18:00-19:00	SESSION 12a: Microbial Communities & Microbial Ecology at Extreme Conditions (III) Chairs: Christa Schleper, Antonio Ventosa	SESSION 12b: Genomics, Metagenomics, Proteomics and Culturomics for Extremophiles (III) Chairs: Elizabeth Watkin, Alejandra Recalde
	OS52 Don Cowan (SA): Antarctic terrestrial microbiomes in the age of climate change: resilience, sustainability and sensitivity	OS56 Popall Rabja (FRA): Hydrogenotrophic microbial enrichments from an alkaline hydrothermal spring driven by serpentinization, Prony Bay, New Caledonia // Talk given by Gaël Erauso
	OS53 Olga Golyshina (UK): Archaeal dominance in low-temperate acidic environment	OS57 Jessica Downing (UK): The Complete Genomic Structure of the Eukaryotic Extremophile Galdieria sulphuraria
	OS54 Raeid Abed (OMN): Metabolic Activity of Microorganisms in Microbial Mats Thriving at Saturation-level Salinities and Their Potential Use in Biofuel Production	OS58 Juan Gonzalez (ESP): The response of a thermophilic bacterium to near-zero growth. A transcriptomic analysis
	OS55 Andreea Baricz (ROM): Microbial diversity and salt stress response strategies in uncultured lineages from the organic-rich sediments of Romanian saline lakes	OS59 Raffaella Margherita Zampieri (ITA): Polyphasic characterization of two newly isolated thermal cyanobacteria of the Leptolyngbya genus
20:00- 22:30	Greek Gala Dinner	

Thursday 22 Sept 2022	
	late start to allow for checkout
09:30 - 11:00	SESSION 13: Extremophiles: Link Between Earth and Astrobiology Chairs: Adrienne Kish, Elias Chatzitheodoridis
09:30-10:00	KL13 Elias Chatzitheodoridis (GRE): Methods and techniques for biosignature detection in astrobiology
10:00-11:00	OS60 Adrienne Kish (FRA): Preparing for Real-time Monitoring of Halophilic Archaea Exposed to Space Radiation Outside the International Space Station on Exocube
	OS61 Oddur Vilhelmsson (ISL): Microbial life in subsurface planetary analogues in Iceland
	OS62 Kristina Beblo-Vranesevic (GER): New model organisms for astrobiology from Mars analog environments
	OS63 Donato Giovannelli (ITA): Geosphere and Biosphere coevolution: the role of trace metals availability in the evolution of biogeochemistry
11:00-11:30	Coffee and networking
11:30-12:00	Closing lecture Chair: Konstantinos Vorgias
	KL14 Marco Moracci (ITA): Exploring the biodiversity of an extreme environment: discovery of novel enzymes, metabolisms and biotechnology applications
12:00	Garabed Antranikian (GER) - Closing remarks
12:30 - 13:00	Poster Awards Ceremony
13:00	Closing Ceremony