13th of September 2022

12pm Registration Opens
14:00-14:30 Conference Opening
14:30-16:45 Session 1: Introductory and Keynote Sessions
17:00 - 20:00 Poster Session with local pintxos and wine reception

14th of September 2022

07:30-08:15 Morning run
09:00-11:00 Session 2: Human Health
11:30-18:15 Session 3: Agriculture, Aquaculture and Food Production
17:00-23:00 Conference Social Tour & Dinner

15th of September 2022

09:00-10:45 Session 4: Biodiversity and conservation
11:15-12:30 Session 5: Technical & Methodological Perspectives
13:15-14:15 Session 6: The Industry/Academia Partnership
14:20-15:00 Session 7: Student Poster award & Closing talks

Scan here to ask questions!

@AppliedHoloConf
#AHC2022

See the conference abstracts here!

www.appliedhologenomicsconference.eu

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 817729
14:00 Conference Opening

14:00 Welcome by local organisers Dr. Melanie Parejo and Dr. Iratxe Zarraonaindia (University of the Basque Country EHU/UPV, Spain)
14:10 Welcome by HoloFood coordinator Prof. Tom Gilbert (University of Copenhagen, Denmark)
14:20 Welcome by Research Vice Director of the University of the Basque Country Dra. Inmaculada Arostegui

Session 1: Introductory and Keynote Sessions

14:30 The extended human hologenome, the next hundred years
Prof. Rob Dunn, NC State University, USA

15:00 A Symbiotic Dialogue
Discussion hosted by moderator Assoc. Prof. Antton Alberdi (UCPH, DK) with Prof. Seth Bordenstein (Penn State University, USA) & Senior Scientist Henna-Maria Kailanto (IFF Health, Finland)

16:00 Multi-omics techniques applied to investigate the global human microbiome
Assist. Prof. Mathilde Poyet (University of Kiel, Germany)

16:45 Group Photograph

17:00 - 20:00 Poster Session with local pintxos and wine reception

Please note: attendees with posters are split in the following groups and are asked to stand by their posters during the following time points

17:15-18:00
Group 1: Posters with numbers 1-28

18:00-18:45
Group 2: Posters with numbers 29-46

18:45-19:30
Group 3: Posters with numbers 47-65

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Session 2 Human Health
Moderated by Prof. Tom Gilbert (UCPH, DK)

09:00  Food for thought: hologenomic adaptations to amylose and lactose in the evolving human diet
Assoc.Prof. Christina Warinner Harvard University USA, MPI Germany

09:25  Evolution and function of host-microbiome systems
Assistant Prof. Mathieu Groussin, University of Kiel, Germany

09:50  The gut microbiota and mental disease – approaching a hologenomics view
Prof. Karsten Kristiansen, University of Copenhagen, Denmark

10:15  Distinctive Streptococcus clades characterise oral niches regardless of industrialisation status and oral pathology
Irina M. Velsco, Max Planck Institute for Evolutionary Anthropology, Germany

10:30  Why are there different microbial community types?
Karoline Faust, KU Leuven, Belgium

10:45  Ancient oral microbiome reveals gradual adaptation of Italian prehistoric communities to Neolithic dietary shifts towards agriculture
Andrea Quagliariello, University of Padua, Italy

11:00-11:30 Coffee Break
Session 3: Agriculture, Aquaculture and Food Production

Moderated by Associate Professor Morten Limborg (UCPH, Denmark) and Research Associate Dr Iratxe Zarraonaindia (UPV/EHU, Spain)

11:30 Research and Innovation for microbiomes
Magdalena Gajdzinska, Directorate General for Research and Innovation of the European Commission, Brussels

11:55 Engineering algal microbiomes for sustainable food and feed production
Professor Lone Gram, DTU, Denmark

12:20 Leveraging microbiota services through hologenomic analyses to improve gut health in farmed salmon
Jaelle C. Brealey NTNU, Norway

12:35 A hologenomic approach to the management of infectious diseases affecting the American oyster, Crassostrea virginica
Marta Gomez-Chiarri, University of Rhode Island, USA

12:50 Microbiota-mediated protection against Flavobacterium infection in gnotobiotic zebrafish
Rebecca J. Stevick and David Pérez Pascua, Institute Pasteur, France

13:15-14:15 Lunch Break

14:15 What if the unit of selection in breeding is the holobiont instead of the plant?
Assistant Researcher Dr Amaia Nogales, ISA, Universidade de Lisboa, Portugal

14:40 Plant microbes and bacteriophages; the smallest, most abundant entities of plant microbiomes
Prof. Lars Hestbjerg, University of Copenhagen, Denmark

15:05 Potential drivers of plasticity and persistence of the gut microbiome
Prof. Itzik Mizrahi Ben-Gurion University of the Negev, Israel

15:30 Copy number variation on ABCC2-DNMBP loci impacts the diversity and functions of the gut microbiota in pigs
Yuliaxis Ramayo Caldas, Institute of Agrifood Research and Technology, Spain

15:45 Elucidating host genetic effects on the microbiota using zebrafish and CRISPR/Cas- a hologenomic approach
Eiríkur Andri Thormar, University of Copenhagen, Denmark

16:00 Supplemented diets with quercetin and epicatechin enhance the growth performance of Totoaba macdonaldi related to the improvement of gut microbiota metagenomic analysis and liver transcriptome: a hologenomic approach
María Fernanda Barragán-Longoria, ITESM, Mexico

Session ends 16:15.

17:00 Social Evening - Tour and dinner - Pick up at 17:00pm in front of conference venue. Return to Bilbao approximately 11pm
Session 4: Biodiversity and conservation
Moderated by Prof. Mike Martin (NTNU, Norway)

09:00 Global hologenomics to reveal the impact of wild animal-microbiota interactions on ecological and evolutionary processes
Dr. Aoife Leonard, University of Copenhagen, Denmark

09:25 Metagenomic shifts in mucus, tissue and skeleton of the coral Balanophyllia europaea living along a natural CO2 gradient
Research Fellow Giorgia Palladino, University of Bologna, Italy

09:50 The gut microbiota affects the social network of honeybees
Prof. Philipp Engel, University of Lausanne, Switzerland

10:15 Host-microbiota responses to a series of perturbations in two case-studies
Adam Koziol, University of Copenhagen, Denmark

10:30 Hologenomic analysis of hundreds of herbarium specimens reveals the genomic basis of a plant invasion
Dr Vanessa Bieker, NTNU, Norway

Coffee Break 10:45 – 11:15

Session 5: Technical & Methodological Perspectives
Moderated by Lorna Richardson (EMBL-EBI, UK)

11:15 Network analysis of host-microbiome omics data
Prof. Torgeir Hvidsten, NMBU, Norway

11:35 Connecting structure and function from organs to molecules in host-microbe interaction
Dr Manuel Liebeke- Max Planck Institute for Marine Microbiology, Germany

11:55 New data, same challenges: Case study of DNA-methylation associated with tenacibaculosis and microbiome composition in Atlantic Salmon (salmo salar)
Søren Blikdal Hansen University of Copenhagen, Denmark

12:10 A Microbial Genome Atlas enables novel insights into bacteria-host interactions via functional mapping
Arturo Vera-Ponce de León, NMBU, Norway

12:30-13:15 Lunch

https://appliedhologenomicsconference.eu/AHC_Abstracts.html
Session 6: Holo-omics and the Industry/Academia Partnership

Round table moderated by Ana R. Verissimo (UCPH, Denmark)

13:15-14:15 Round table panel discussion on the industry - academia partnership
with Harald Sveier (Lerøy, Norway), Itziar Tueros (ATZI, Spain), Magdalena Gajdzinska (Directorate General for Research and Innovation of the European Commission, Brussels), Rob Dunn (NC State University, USA)

Session 7: Closing ceremony and poster award

14:20 Concluding Remarks by Prof. Seth Bordenstein (Penn State University, USA)
14:45 Student poster award and closing of the conference
Prof. Tom Gilbert and Associate Prof. Morten Limborg (University of Copenhagen, Denmark)

15:00 Conference ends – thank you for joining us!
### Posters associated with this Session 2: Human Health

**Poster #21** Paleofeces reveal recent loss of diversity and microbial symbionts in the Western gut microbiome  
ALEXANDER HÜBNER, MPI, Germany

**Poster #28** The Parasite microbiome: a novel resource for therapeutic and diagnostic development  
DHEILLY NOLWENN, UMR, France

**Poster #48** Gut-on-a-chip in vitro models for a more accurate understanding of the action of probiotics in human health  
OSTAIZKA AIZPURUA, UCPH, Denmark

**Poster #57** Bidirectional causality between gut microbiota and HLA DQ2 celiac patients: a Two-sample Mendelian Randomization approach  
BÁRBARA GONZÁLEZ GARCÍA, UPV/EHU, Spain

### Posters associated with Session 3: Agriculture, Aquaculture and Food Production

**Poster #4** Impact of feed additives and host-related factors on bacterial metabolic activity, and immunological traits in the ileum of broilers  
YADA DUANGNUMSAWANG, Freie Universität Berlin, Germany

**Poster #5** Impact of feed additives and host-related factors on bacterial metabolic activity, and immunological traits in the caecum of broilers  
YADA DUANGNUMSAWANG, Freie Universität Berlin, Germany

**Poster #7** Comparative analysis of metagenomics and metataxonomics for the characterization of vermicompost microbiomes  
KEITH A. CRANDALL, George Washington University, USA

**Poster #9** A data-driven selection scheme of nutritionally beneficial bacteria for marine aquaculture fish  
KONSTANTINOS KORMAS, University of Thessaly, Greece

**Poster #12** Recovering ancient fermented beverages from trans-Himalayan trade routes along the Tibetan plateau  
MAXIME BORRY, MPI, Germany

**Poster #19** Microbiome composition and distribution of major endosymbionts in Scaphoideus titanus Ball,1932 across northern Italy.  
JUAN SEBASTIAN ENCISO, The Free University of Bozen-Bolzano, Italy

**Poster #22** Specific microbial fingerprints are associated with low levels of LT toxin-carrying enterotoxigenic Escherichia coli in the gut  
ALESSANDRA TANCREDI, Gent University, Belgium

https://appliedhologenomicsconference.eu/AHC_Abstracts.html
### Poster #23 Engineering microbiomes to improve insect production and performance
ASMUS TOFTKÆR MUURMANN, Aalborg University, Denmark

### Poster #29 Role of the microbiota in alimentary tick-borne encephalitis virus infection
DHEILLY NOLWENN, Anses UMR Virology, France

### Poster #30 Large intestine Caco2-cell adhesion of probiotic microbiota when exposed to spice/herb extracts and Thai curry under in-vitro digestion model
JUTAMAT KLINSODA, Kasetsart University, Thailand

### Poster #31 Temporal development of the intestinal microbiota and tissue gene expression in broiler chickens
SOFIA MARCOS, University of the Basque Country, Spain

### Poster #39 Koji-based fermented foods as a model system for understanding fungal-bacteria interactions and their potential effects on host-associated metabolism
TIFFANY MAK, DTU BioSustain, Denmark

### Poster #41 Improving the characterisation of the chicken gut microbiome: a multi-kingdom genomic approach
GERMANA BALDI, VARSHA KALE, EMBL-EBI, UK

### Poster #42 A paired metagenomic and metatranscriptomic analysis of the salmon gut microbiome to assess the performance of sustainable feed additives
VARSHA KALE, GERMANA BALDI, EMBL-EBI, UK

### Poster #43 Berberrubine, a berberine-derived metabolite, is produced by the gut microbiota and improves gut health
TESSA DEHAU, Ghent University, Belgium

### Poster #45 Microbiome of pigs treated with different antimicrobials during an outbreak of post-weaning diarrhoea
JUDITH GUITART-MATAS, INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTÀRIES (IRTA), Spain

### Poster #46 Viromes of Atlantic salmon correlate with gut microbiota and disease infection status – potential for modulating microbiome dysbiosis
CAROLINE SOPHIE WOLTERS PETERSEN, University of Copenhagen, Denmark

### Poster #47 HOLO-ROMICS ELUCIDATE COEVOLUTION OF HOST-MICROBIOTA IN SALMONIDS
JACOB AGERBO RASMUSSEN, University of Copenhagen, Denmark

### Poster #51 Interactions between the probiotic Phaeobacter inhibens S4, the marine pathogen Vibrio coralliilyticus RE22, and the holobiont of larval American oysters, Crassostrea virginica
JESSICA COPPERSMITH, University of Rhode Island, USA

### Poster #55 Unlocking aggressive animal behaviour using metatranscriptomics
LUISA SANTOS-BAY, University of Copenhagen, Denmark

[https://appliedhologenomicsconference.eu/AHC_Abstracts.html](https://appliedhologenomicsconference.eu/AHC_Abstracts.html)
Posters associated with Session 3 #3

**Poster #56 The HoloFood Data Portal**  
ALEXANDER (SANDY) ROGERS, EMBL-EBI, UK

**Poster #58 Dynamics of the Top Biome of cereal leaf beetle (Oulema melanopus) is influenced by the diet and developmental stage.**  
BEATA WIELKOPOLAN, Institute of Plant Protection, Poland

**Poster #60 Revisiting in the ecological origins of bacteria in our fermented foods**  
VERONICA M. SINOTTE, University of Copenhagen, Denmark

**Poster #61 Saccharomyces cerevisiae on the rise: Domestication of yeast in breadmaking**  
MARGOT RUFFIEUX, North Carolina State University, USA

**Poster #62 Social bee microbiomes are the missing link in the origin of human fermented foods**  
ANA CUESTA-MATÉ, University of Copenhagen, Denmark

**Poster #63 Molecular mechanisms of microbiota-mediated protection against Flavobacterium infection in gnotobiotic zebrafish**  
DAVID PÉREZ PASCUAL, Institute Pasteur, France

**Poster of #64 In vitro model to study synbiotic-pathogen-gut microbiota interactions at microscale**  
ANDI EREGA, ETH Zürich, Switzerland

Posters associated with Session 4: Biodiversity and conservation

**Poster #15 Origin and acquisition of rhizosphere microbes in antarctic vascular plants**  
EDUARDO CASTRO-NALLAR, Universidad de Talca, Chile

**Poster #34 Feed-microbiome-host interactions in Atlantic salmon over life stages**  
SHASHANK GUPTA, NMBU, Norway

**Poster #38 Experimental warming and cooling shapes host microbiota composition**  
JINGDI LI, University of Oxford, UK

**Poster #40 Exploring the pet gut microbiome within a large-scale investigation of animal gut metagenomes**  
ANA CUSCO, Fudan University, China

**Poster #44 Hologenomic Adaptation of European Whitefish**  
MENG ZHAO, University of Copenhagen, Denmark
**Posters associated with Session 5: Methodological Breakthroughs**

**Poster #1 Improving accessibility to ancient microbiome data beyond palaeogenomics**  
JAMES A. FELLOWS YATES, LEIBNIZ INSTITUTE FOR NATURAL PRODUCT RESEARCH AND INFECTION BIOLOGY & MPI, Germany

**Poster #6 Evaluation of computational methods for human microbiome analysis using simulated data**  
MATTHIEU J. MIOSSEC/MARCOS PÉREZ-LOSADA, George Washington University, USA

**Poster #10 microbetag: a microbial co-occurrence network annotator**  
HARIS ZAFEIROPOULOS, KU Leuven, Belgium

**Poster #13 Can shallow shotgun-based profiling of the gut microbiome improve the detection of host genetic effects?**  
FELIPE MORILLO SANZ DIAS, Center for Genomic Regulation, Spain

**Poster #37 Recovering High-Quality Host Genomes from Gut Metagenomic Data through Genotype Imputation**  
SOFIA MARCOS, University of the Basque Country, Spain

**Poster #49 Reference-agnostic estimation of microbial read abundance in holobionts**  
RAPHAEL EISENHOFER, University of Copenhagen, Denmark