



7<sup>th</sup> Conference on  
**PHYSIOLOGY OF YEASTS  
& FILAMENTOUS FUNGI**

24-27 JUNE 2019 | MILAN, ITALY

The 7th Conference on Physiology of Yeast and Filamentous Fungi was held in Milan from 24 – 27 June 2019. The aim of the PYFF series is to bring together a strong interdisciplinary cohort of researchers, at all stages of their careers, who share an interest in applied and basic aspects of the physiology of yeasts and filamentous fungi. The series has been running since 2001 and attracts a broad spread of researchers from academia and industry. PYFF7 is coming at a key juncture in the development of this field. During the last few years, the explosion of comparative and functional genomics, the development of system and synthetic biology and the expansion of metabolic and evolutionary engineering, have boosted our understanding of these eukaryotic microbes and led to exciting developments in the biotechnological, food, beverage and pharmaceutical industries.

The topics included:

- Evolution and niche adaptation of yeast and filamentous fungi
- Genetic and phenotypic heterogeneity in fungal and yeast populations
- Fundamental physiology and metabolic processes in yeast and filamentous fungi
- Cellular compartmentalization: trafficking, metabolosomes and quinary structures of macromolecules
- Mycobiome and interactions with other eukaryotes
- Systems biology and metabolic engineering for biotechnological processes
- Microbial Biotechnologies for Food and Biochemicals ITN projects cluster: Progressive training in yeast and fungal science
- Response and tolerance to stress in the context of industrial bioprocesses
- Natural and Synthetic Ecology: interactions and applications of mixed cultures (especially in food, beverage and biotechnology)

**Final Programme**  
**7<sup>th</sup> Conference on Physiology of Yeasts and Filamentous Fungi**  
**Milan, University of Milano Bicocca, June 24-27, 2019**

**Monday, June 24<sup>th</sup> 2019**

12.00 - 13.45	Registration
14.00	Opening
14.15	The EMBO Keynote Lecture <b>Ken Wolfe - University College Dublin, Ireland</b> "Origin of yeast's natural genome engineering system, mating-type switching"
<b>Session I - Evolution and niche adaptation of yeast and filamentous fungi</b> Chairs: Paola Branduardi and Isabel Sá-Correia	
15.20	Invited Lecture <b>Daniela Delneri - University of Manchester, United Kingdom</b> "Phenotypic variation in yeast hybrids of biotechnological importance"
15.50	Invited lecture <b>Isabelle Benoit-Gelber - Concordia University, Canada</b> "Metabologenomics for correlation of fungal natural products and their biosynthetic gene clusters"
16.20	Juergen Wendland: "Multi-omics characterization of <i>Saccharomycopsis</i> yeasts, the unique fungal predators"
16.35	Virginie Galeote: "How different anthropogenic environments have shaped the genome of <i>S. cerevisiae</i> ?"
16.50	<i>Coffee break</i>
<b>Session II - Genetic and phenotypic heterogeneity in fungal and yeast populations</b> Chairs: Ileana Vigentini and Sylvie Dequin	
17.20	Invited lecture <b>Florian Bauer - Stellenbosch University, South Africa</b> "Interactions between yeast species in wine-related ecosystems"
17.50	Nubia Jimena Grijalva Vallejos: "Biodiversity of chicha yeast strains with potential value in alcoholic fermentations"
18.05	Lina Heistingering: "Population heterogeneity of the <i>Komagataella phaffii</i> mating response"
18.20	<i>Poster flash talks</i>
18.40	Welcome cocktail & poster session

**Tuesday, June 25<sup>th</sup> 2019**

<b>Session III - Fundamental physiology and metabolic processes in yeast and filamentous fungi</b> Chairs: Gerhard Braus and Diethard Mattanovich	
9.00	Invited Lecture <b>Markus Bisschops - TU Delft, The Netherlands</b> "Yeast physiology at near-zero specific growth rates"
9.30	Gertien Smits: "Caloric restriction controls stationary phase survival through Protein Kinase A and cytosolic pH"
9.45	Lukas Veiter: "Flow cytometry as a versatile tool for monitoring biomass agglomerates in yeast and filamentous fungi"

10.00	Pamela Vrabl: "Fungal photophysiology – Establishing the methods to explore the crosstalk between light and fungal metabolism"
10.15	<i>Coffee break</i>
10.45	Invited Lecture <b>Matthias Steiger - BOKU University, Austria</b> "Metabolite transport by <i>Aspergillus niger</i> "
11.15	Gerhard Braus: " <i>Aspergillus</i> as model for control of coordinated development and secondary metabolism"
11.30	Riccardo Milanesi: "Lack of SNF1 and methionine supplementation rewire yeast central carbon metabolism under glucose repression"
11.45	Elena Colombo: "Development of a <i>Fusarium graminearum</i> biosensor assay to monitor the activity of naturally derived products to control trichothecene production"
12.00	Vijayendran Raghavendran: "Yeast propagation using microbubbles for cost effective bioethanol production"
12.15	<i>Poster flash talks</i>
12.35 -13.30	<i>Lunch</i>
13.30 – 15.00	Poster Session
<b>Session IV - Cellular compartmentalization: trafficking, metabolosomes and quinary structures of macromolecules</b>	
Chairs: Eckhard Boles and Maurizio Bettiga	
15.00	Invited lecture <b>Mislav Oreb - Goethe University Frankfurt, Germany</b> "Development of substrate channeling strategies in <i>S. cerevisiae</i> "
15.30	Gennaro Agrimi: "Role of mitochondrial transporters in metabolic engineering of yeasts and fungi for organic acid production"
15.45	Nicoletta Guaragnella: "Yeast acetic acid stress response is regulated by nutritional status through mitochondrial retrograde and high-osmolarity glycerol pathways"
16.00	Andreas Meyer: "High throughput screening of yeasts and filamentous fungi in nanoliter-reactors"
16.15	<i>Coffee break</i>
<b>Session V - Mycobiome and interactions with other eukaryotes</b>	
Chairs: Fabrizio Beltrametti and John Morrissey	
16.45	Invited lecture <b>Natalia Requena - Karlsruhe Institute of Technology, Germany</b> "Getting to the root of the AM symbiosis"
17.15	Giacomo Zara: "Stability and phenotypic properties of <i>Eisenia fetida</i> mycobiota during vermicomposting"
17.30	Nuno Mira: "Study of the interaction between vaginal lactobacilli, <i>Candida albicans</i> and <i>Candida glabrata</i> : from physiological aspects to OMICs analyses"
17.45	<b>Keynote lecture</b> <b>Al Brown - University of Aberdeen, UK</b> " <i>Candida albicans</i> displays anticipatory responses that promote immune evasion"
18.45	<i>End</i>

Wednesday, June 26<sup>th</sup> 2019

<b>Session VI - Systems biology and metabolic engineering for biotechnological processes</b> Chairs: Jean-Marie Francois and Michael Sauer	
9.00	Invited lecture <b>Verena Siewers - Chalmers University, Sweden</b> "Production of fatty acid-derived compounds in <i>Saccharomyces cerevisiae</i> "
9.30	Nadia Maria Berterame: "Synthetic biology at the service of society: the sustainable production of folate"
9.45	Marie Gorwa Grauslund: "Identification of modifications procuring growth on D-xylose in recombinant <i>Saccharomyces cerevisiae</i> strains carrying the Weimberg pathway"
10.00	Julia Hitschler: "Polyketide synthase and decarboxylase mediated production of aromatic m-cresol in <i>Saccharomyces cerevisiae</i> "
10.15 – 10.45	<i>Coffee break</i>
10.45	Invited lecture <b>Nick Wierckx - Forschungszentrum Jülich, Germany</b> "Itaconic acid production in <i>Ustilago</i> : beyond metabolic engineering."
11.15	Nadia Parachin: "Genetic engineering strategies for improvement of Hyaluronic acid production in non-conventional yeasts"
11.30	Vasil D'ambrosio: "Directed evolution of small-molecule receptors for screening and selection of yeast cell factories"
11.45	Yvonne Nygård: "Synthetic control devices for gene regulation in <i>Penicillium chrysogenum</i> "
12.00	Rui Silva: "Towards the valorization of crude glycerol to high-value chemicals by engineered <i>Ashbya gossypii</i> "
12.15	Lisbeth Olsson: "Adipic acid production in yeast – addressing the challenges of the lysine pathway"
12.30	<i>Poster flash talks</i>
12.45 – 13.30	<i>Lunch</i>
13.30 – 15.00	Poster Session
<b>Session VII - Microbial Biotechnologies for Food and Biochemicals ITN projects cluster:</b> <b>Progressive training in yeast and fungal science</b> Chairs: Irina Borodina, Amparo Querol and John Morrissey	
<b>Part 1: Collaborative International PhD training – Chair; Irina Borodina, DTU</b>	
15.00	Invited Lecture <b>Maurizio Bettiga - Chalmers University, Sweden</b> "Changing education landscape of doctoral and postdoctoral trainees transitioning to a career in bio-based economy: case studies on learners from diverse niches"
15.25	Lorena Donzella: "Analysis of candidate xylose transporters in <i>Kluyveromyces marxianus</i> "
15.35	Christoph Börlin: "Understanding transcriptional regulation of amino acid metabolism through mapping of transcription factor binding sites using ChIP-exo"
15.45	Irene De Guidi: "Genetic analysis of excessive production of H <sub>2</sub> S in presence of SO <sub>2</sub> during wine making"
15.55	Carmen Becerra Rodriguez: "Diversity of oligopeptide transporters in industrial yeasts"

<b>Part 2: Marie Sklodowska-Curie Actions for Careers and Policy – Chair; John Morrissey, UCC</b>	
16.05	EC Policy Officer (Brussels): “EC Food and Biotechnologies policies”
16.20	EC MSCA Policy Officer: “Marie Sklodowska-Curie Actions policies”
16.35	Irina Borodina “Preparing and running an MSCA ITN”
16.45	David Peris “Developing your career with an MSCA IF”
16.55	Panel Discussion with Q & A (Moderated by JM, MB, IB, DP, VM, DG, EE): Researcher Careers in Europe; Role of policy in influencing science and education; Future directions for career training.
17.20-17.35	<i>Coffee break</i>
<b>Part 3: Education and training – Chair; Amparo Querol, CSIC</b>	
17.35	Invited Lecture <b>Vera Meyer - TU Berlin, Germany</b> “Vita activa in biotechnology: What we do with fungi and what fungi do with us”
18.00	Helén Olsson: “High-throughput strain construction using CRISPR-Cas9 and Selective Ploidy Ablation - Employing the yeast mutant libraries for metabolic engineering purposes”
18.10	Toni Rendulic: “Exploring plasma membrane transporters to improve organic acid production in yeast – Characterization and engineering”
18.20	Dolores Pérez: “Differential nitrogen utilization and aroma production of commercial and wild <i>Saccharomyces cerevisiae</i> yeast strains during growth and alcoholic fermentation”
18.30	Thomas Perli: “Expanding the enzyme catalog of <i>Saccharomyces cerevisiae</i> by engineering molybdenum cofactor biosynthesis”
<b>Closing Keynote – Chair; Paola Branduardi, UNIMIB</b>	
18.40	UNIMIB Lecture <b>Raffaele Liberali: “Early days of Marie Curie Actions”</b>
19.00	<i>End</i>

**Thursday, June 27<sup>th</sup> 2019**

<b>Session VIII - Response and tolerance to stress in the context of industrial bioprocesses</b> Chairs: Francesca Martani and Verena Siewers	
9.15	Invited Lecture <b>Isabel Sá-Correia - University of Lisbon, Portugal</b> “Physiological Genomics of the response and tolerance of yeasts to industrially relevant stresses”
9.45	Jean-Pascal Capp: “Bimodal gene expression in yeast populations: from basic determinants to consequences on stress resistance”
10.00	Lucilia Domingues: “Proteomic analysis for the identification of the mechanisms involved in yeast thermotolerance”
10.15	Beatriz Vallejo: “Molecular analysis of nutrient signalling pathways of <i>Saccharomyces cerevisiae</i> during winemaking”
10.30-11.00	<i>Coffee break</i>
11.00	Invited Lecture <b>Giovanna Cristina Varese - University of Torino, Italy</b> “Fungi in soil bioremediation”
11.30	Elia Tomás Pejó: “Insoluble solids affect yeasts in ethanol production processes by increasing reactive oxygen species and repressing general stress response”

11.45	Ricardo Ribeiro: "Yeast response to acetic acid: focus on cell envelope properties, assessed by AFM"
12.00	<i>Poster flash talks</i>
12.20 -13.30	<i>Lunch</i>
13.30 – 14.30	Poster Session
<b>Session IX - Natural and Synthetic Ecology: interactions and applications of mixed cultures (especially in food, beverage and biotechnology)</b> Chairs: Giovanna Cristina Varese and Vera Meyer	
14.30	Invited lecture <b>Markus Ralser - University of Cambridge, UK</b> "How gene-metabolism interactions and network structure drive metabolic cooperation"
15.00	Ana Mencher Beltrán: "A morphological, proteomic and physiological characterization of yeast extracellular vesicles in an oenological context"
15.15	Ivan Schlembach: Consolidated bioprocessing of cellulose to itaconic acid using a co-culture between <i>Trichoderma reesei</i> and <i>Ustilago maydis</i> "
15.30	<b>Keynote Lecture</b> <b>Benjamin Wolfe - Tufts University, USA</b> "Phenotypic and metabolic domestication of fungi in fermented foods"
16.30	<b><i>Poster awards and closing</i></b>
17.00	End
20.00	<b><i>Gala dinner</i></b>