ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO
DI FARMACIA
E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **20 luglio 2026**
alle ore **12:00**

Prof.ssa Karolin Hijazi

Professor, Institute of Dentistry - University of Aberdeen, Scotland UK
(ospite del Prof. M.R. Oggioni)

terrà un seminario in lingua inglese dal titolo:

Epigenetic switching as regulator of pathogenicity in *Porphyromonas*

in presenza:
AULA SPAMPINATO, UE5 – Via Gobetti 87, Bologna

L' evento è organizzato nell'ambito del Corso di Dottorato in Biologia Cellulare e Molecolare. Colleghi e studenti sono cordialmente invitati

ABSTRACT

Porphyromonas gingivalis is a highly adaptable oral Gram-negative linked to both periodontal disease and a range of systemic disorders. But what drives its remarkable ability to switch from harmless colonizer to pathogen? This presentation reveals the first evidence of a phase-variable DNA methylation system in *P. gingivalis*. Discover how reversible epigenetic changes generate distinct bacterial subpopulations with unique virulence profiles in *P. gingivalis* and how genome-wide methylation reshapes gene expression and bacterial behaviour. Explore the impact of these epigenetic states on host cell invasion, immune evasion, and pathogenic potential. Combining methylomics, transcriptomics, and functional assays, this work uncovers a previously unrecognized regulatory mechanism. These findings redefine our understanding of bacterial adaptation and virulence in *P. gingivalis*. Join us to discover how epigenetics is transforming our view of one of the oral microbiome's most important pathogens.

BIOGRAPHICAL SKETCH

Professor Karolin Hijazi, Clinical Chair at the University of Aberdeen (Aberdeen, Scotland), is a member of the Infection & Immunity Programme of the Institute of Medical Sciences and leads the Microbial Diseases Research Group at the Institute of Dentistry. The research work of her laboratory includes both clinical aspects and the molecular study of microbe-host interactions. Recent research focuses on the impact of cutaneous disinfectants on the prevalence of MRSA and MRSE (Sharaf et al., Lancet Microbe. 2025;6(8):101118. doi: 10.1016/j.lanmic.2025.101118) and the relevance of epigenetic gene regulation in the oral pathogen *Porphyromonas gingivalis* (Sharaf et al., FEMS Microbiology Rev. 2026;50:fuag014. doi: 10.1093/femsre/fuag014).