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Department of Medicine
Channing Division of Network Medicine

Channing Microbiome Seminar

December 8 (Friday), 2023, 9AM (ET)

Zoom: <https://us02web.zoom.us/j/81070959105?pwd=RFJNd3dSZmR6dXJZNjJiYVVzQ3NEQT09>

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Decoding the role of breast milk microbiome and probiotics in early life gut microbiome development

In this presentation, we will embark on an exploration into the intricate realm of early-life microbiome development, shedding light on the pivotal roles played by human breast milk and probiotics. Leveraging cutting-edge microbiome profiling technologies, including long-read full-length amplicon sequencing, we will share our latest findings on how the breast milk microbiota intricately influences the engraftment of the gut microbiota in neonates at risk of Celiac Disease, offering insights at both species and strain-level resolution. Transitioning to the second part of the talk, we will delve into the functional mechanisms underlying the contribution of probiotics to early-life gut microbiota development. Employing advanced computational modeling based on genome-scale models of metabolism, we will share our recent progress in dissecting the species-level functional alterations within the gut microbiome of extremely pre-term infants driven by probiotic strains.

Ali Zomorodi is an Instructor of Pediatrics at Harvard Medical School and the Computational and Systems Biology Lead in the Mucosal Immunology and Biology Research Center at Mass General for Children (MGfC). His lab develops AI-driven tools and computational predictive models to parse the molecular crosstalk between the microbiome and host. Through this research, he aspires to advance our understanding of the pathogenesis of human diseases and to streamline the design of personalized treatments. Ali completed his postdoctoral training in the lab of Daniel Segrè at Boston University and earned his PhD in Chemical Engineering from The Pennsylvania State University – University Park.

