<p style="text-align:center">**CONFÉRENCE**</p>

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Lessons for integrating meta-data into the statistical analyses of computational metabolic models

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Possibilité de participer en visioconférence via Teams :
https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTQ0MzA5MTEt-NmY4My00Yzk3LWFiNGQtN2NkN2U3YTA5MmQw%40thread.v2/0?con-text=%7b%22Tid%22%3a%22158716cf-46b9-48ca-8c49-c7bb67e575f3%22%2c%22Oid%22%3a%2202ba1466-e81f-41ea-9262-be5a2fc4ea14%22%7d

Synopsis

The correct sampling, integration, and analysis of meta-data is undeniable core to any meaningful omics analysis. The availability of meta-data defines the feasibility of an analysis paradigm, its strengths, and limitations. For example, unmeasured confounding can render studies entirely meaningless, while, vice versa, overmatching can lead results that are biased and do not generalise to the targeted population. With the emergence of personalised microbiome community models and personalised whole-body models derived from constraint-based modelling and reconstruction analysis (COBRA), the paradigm of fluxome-wide association analysis has emerged. In this paradigm, the flux calculations derived from personalised COBRA modelling are utilised analogously to other omics layers in statistical screening approaches. However, unlike other omics data, flux values are calculations based on deterministic models, given rise to a specific set of challenges and chances that make fluxome-wide association analyses unique among the class of ome-wide association analysis. The lecture will cover basic concepts of meta-data integration from confounding to moderation and then apply these concepts to cohorts of personalised COBRA models such as microbiome community models, highlighting pitfalls and possible routes of interpretation. Finally, the lecture will touch possibilities of causal inference even in the presence of unmeasured confounding by integrating fluxome with metabolome-wide association analysis, demonstrating a new paradigm with promise for personalised medicine.

Organisation et contact
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