BI-CO MATHEMATICS COLLOQUIUM

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" Linking Microbial Metabolism to Microbial Community Environment"

Monday, November 19, 2018
Talk at 4:00 – H109
Tea at 3:30 – Foyer outside of H109

Abstract:

For environmental microbial communities, environment is destiny in the sense that, frequently, microbial community form and function are strongly linked to chemical and physical conditions. Moreover, most environments outside of the lab are physically and chemically heterogeneous, further shaping and complicating the metabolisms of their resident microbial communities: spatial variation introduce physics such as diffusive and advective transport of nutrients and byproducts for example. Conversely, microbial metabolic activity can strongly effect the environment in which the community must function. Hence it is important to link metabolism at the cellular level to physics and chemistry at the community level. To combine and connect the two scales, we propose to replace classical kinetics functions (almost) entirely in community scale models and instead use cell-level metabolic models to predict metabolism and how it is influenced and influenced by the environment.

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