

## **Controlling complex microbial communities**

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**Abstract.** Microbes form complex communities that perform critical roles for the integrity of their environment or the well-being of their hosts. Controlling these microbial communities can help us restore natural ecosystems and maintain healthy human microbiota. However, the lack of an efficient and systematic control framework has limited our ability to manipulate these microbial communities. In this talk, I present our recent work providing a control framework based on the new notion of structural accessibility. Our framework uses the ecological network of the community to identify minimum sets of its “driver species,” manipulation of which allows controlling the whole community. Our results provide a systematic pipeline to efficiently drive complex microbial communities towards desired states.

This is joint work with Yang-Yu Liu (Harvard) and Claude H. Moog (L2SN, France).