“Species interactions in the cheese microbiome”

The Dutton Lab:

Microbial communities play transformative roles in everything from Earth's geochemical cycles to the human body. However, the complexity and difficulty in manipulating microbial communities makes understanding the mechanisms involved in community formation incredibly challenging. One approach to understanding the basic principles of community formation is to use simplified model communities, in much the same way as model organisms such as E. coli have been used to elucidate basic principles of cellular metabolism, genetics, and biochemistry.

Our lab has focused on the use of microbial communities from cheese as models due to their simplicity, culturability, and experimental tractability. These communities show reproducible and dynamic patterns of community formation which depend on widespread interactions between species. We are now developing genetic, cell biological, and chemical approaches to studying species interactions in this model microbial community. As with any model system, our goal is to gain insight into the workings of more complex systems.

https://biology.ucsd.edu/research/faculty/rjdutton