

## **Title**

Lipopolymer hybrid vesicles as a platform for nanoreactors

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### **Abstract poster presentation**

Nanoreactors are nano- to micro-sized confined spaces that encapsulate a catalyst to compartmentalize chemical reactions. Such confined spaces can often be created with phospholipid vesicles. Mixing phospholipids with amphiphilic copolymers has been shown to enhance the chemical and physical stability of these vesicles while retaining biocompatibility with membrane proteins. This project aims to integrate membrane transporter proteins into lipopolymer hybrid membranes to enable the specific transport of negatively charged molecules, such as fumarate and succinate, across the membrane. Furthermore, the potential of hybrid vesicles as nanoreactors is explored by encapsulating a fumarate reductase, creating a nanocompartment that facilitates the reduction of fumarate to succinate.