

# Derek Kabernick

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Synthesis of Isoprenoids using Microfluidic 3D-Printed Cascade Bioreactors

This project focuses on developing 3D printed bioreactors for sequential immobilization of cascade enzyme systems. The objective of this research is to produce isoprenoids in vitro which allows for increased productivity by promoting enzyme reusability, stability, and continuous operation. The current focus of the project is aimed towards developing a COMSOL Multiphysics model to model kinetic behavior and increase pathway flux by minimizing intermediate metabolite accumulation.