

**2024-2025 Available MSc Thesis Project from the Brouwer-Tiley Lab**  
**UNC Eshelman School of Pharmacy**

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**Optimization of Liver Organoid Culture Conditions to Improve Transport Protein Levels and Function**

**Description:** The aim of this project is to investigate different culture conditions (e.g., exploring different media additives) for liver organoids in order to improve the expression and function of hepatic transport proteins over an extended culture period (> 7 days).

**Methods:** The student will learn 3D cell culture methods as well as various techniques for transport protein assessment including targeted proteomics and immunofluorescence analysis. The project will include training in confocal microscopy as well as nano-liquid chromatography mass-spectrometry (nanoLC-MS/MS) and mass-spectrometry data analysis.

**Advisors:** Prof. Kim L.R. Brouwer, Direct Supervisor: Mattie Hartauer, PhD student