

Master's Thesis Opportunity

Topic: Purification and characterization of membrane-associated condensating proteins

Group: Poolman Lab, University of Groningen

Start and duration: Early 2027, 40 ECTS

The project

Biomolecular condensates — formed when proteins undergo liquid–liquid phase separation — are emerging as a central organising principle in cells, and membrane-associated condensates are a particularly young and open area of the field. In this project we purify and characterise membrane proteins that are engineered to form condensating proteins. The work addresses fundamental questions about how these systems behave in biology, and feeds directly into applications in synthetic biology.

What you will do

- Cloning and strain engineering
- Expression and purification of membrane proteins
- Reconstitution of purified protein into giant unilamellar vesicles (GUVs)
- Activity assays on the reconstituted proteins
- Fluorescence microscopy imaging
- Data analysis and reporting

What you will learn

Hands-on training in biochemistry, molecular biology and microscopy, covering the full route from gene to functional assay: cloning, strain engineering, working with bacteria, and the expression, purification and *in vitro* characterisation of condensating membrane proteins.

Who we are looking for

We are looking for a motivated and curious MSc student who takes initiative and is eager to learn. One who enjoys reading widely around the subject and can work independently, bringing your own ideas and questions to the project rather than waiting to be told what to do next. Prior experience in molecular biology, protein purification or biochemistry is an advantage, but not a requirement — a willingness to learn matters more.

Interested?

Get in touch with Prof. Bert Poolman/ Aditi Kakkad (PhD candidate) at b.poolman@rug.nl / a.kakkad@rug.nl — informal enquiries are welcome.