FORSKERPRAKTIK 2024

Projekt 8

Name: Arriën Symon Rauh & Annette Juma Skæfergaard Nielsen
Title: PhD Students
University: University of Copenhagen

Project head line:	Ancient Retroviruses for Innovative Drug Delivery Systems
Field of research or institute:	*Molecular and Structural Biology (the Integrative Structural Biology cluster at the University of Copenhagen)*
Language:	*English*
Courses/gymnasiefag in high school related to your subject:	*Biology*
Short resume of the project purpose – what are the students going to learn and do:	There is a constant need for innovative drug delivery systems. Ancient retroviral elements in our DNA offer great potential, as they can evade immune detection. By studying virus structures and formation, we can explore the potential of using retroviruses for drug delivery.
Further description:	Innovative drug delivery systems are essential to advancing medical treatments. Ancient retroviral elements embedded in our genome present significant promise, particularly due to their ability to bypass immune detection. This project examines the feasibility of utilizing these retroviruses for drug delivery. By focusing on structures such as GAG proteins and capsid formations, students will investigate how these elements can be repurposed. Utilizing advanced techniques like Cryo-Electron Microscopy (Cryo-EM) and Molecular Dynamics (MD), this interdisciplinary study integrates virology, structural biology, and biomedical engineering to explore how domesticated retroviruses can revolutionize targeted drug delivery, enhancing treatment effectiveness and reducing side effects.