

**Homework for iQB2 Course – Structural Biology Module**

*Due date (by email to nvo@uscb.edu): 12/10/2025*

You just received data from the cryo-EM facility. It took significant effort to optimize your sample, and you used negative stain EM to verify its quality. Initial observations suggested the protein adopts multiple conformations, with minor contamination by smaller particles. Despite following the "sample-sample-sample" paradigm rigorously, you could not obtain a more homogeneous sample, and this is what was submitted for data collection.

Design a detailed plan for data processing, outlining each step along with relevant parameters. Provide a rationale for each step to explain its purpose. Additionally, identify potential challenges that could arise during the process and propose strategies to address these obstacles.