

P037 Structural studies of translating ribosomes
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We are studying the structural basis of protein synthesis in a variety of prokaryotic and eukaryotic systems using cryo-EM and crystallography. In prokaryotes, we are building on previous work with short nascent polypeptides bound to the P-site tRNA and present within the tunnel of the large subunit by addressing the structures of complexes synthesising larger proteins. These present significant technical challenges due to the preferential orientation of ribosomal particles charged with long mRNAs on cryo-EM grids. In addition, we are studying a number of eukaryotic systems and in particular have purified ribosomes from the slime mould *Dictyostelium discoideum* and reconstructed them, paving the way for a structural study of the variable compositions and conformations present in different cell types and developmental stages of this model organism.