

**MX2273 mid-term report**

The **Southampton, Bristol, Exeter, KCL, Portsmouth, UCL Royal Free BAG** has suffered heavily from COVID restrictions, imposed in the UK, delaying much of the proposed work. While this is so, the BAG has seen uptake of beamtime by members new to this BAG, notably from Bristol (Woolfson) and Portsmouth (McGeehan, Zahn, Pickford). Their work on enzyme engineering and protein design are exciting new fields of research the BAG is proud to represent.

**The Spencer group** reports new mechanisms of antibiotic resistance and publishes a study on beta-lactamase inhibitors. RSC Med Chem Jan 10 (2020), 491-496; doi: 10.1039/c9md00557a; PDB:6TD0.

**The Werner group** reports new structures collagen VI von Willebrand factor type A domains for the study of congenital myopathies. The study combines crystal structure determination and SAXS analysis. Journal of Biological Chemistry, 295 (2020), 12755-12771; doi.org/10.1074/jbc.RA120.014865; PDB:6SNK.

**The Steiner group** reports a combined neutron/x-ray study on the tetrameric cofactor-independent urate oxidase, an essential enzyme for uric acid catabolism in many organisms. The study reveals a proton-relay system, with room-temperature crystallography revealing functional conformational heterogeneity required to modulates the peroxo hole. IUCrJ. 8 (2021), 46-59; doi: 10.1107/S2052252520013615; PDB:7A0L.

**The Berger group** reports structures of the Human Karyopherin RanBP5, an Essential Factor for Influenza Polymerase Nuclear Trafficking. J Mol Biol. 432 (2020), 3353-3359; doi: 10.1016/j.jmb.2020.03.021; PDB:6XTE, 6XU2.

***Thanks to all staff on beamline and administration for continued support!***