**Protein crystallography**

The students will need a Windows laptop equipped with CCP4 and with wincoot:

May be downloaded here:

http://www.ccp4.ac.uk/tmp/tarballs/bin/Windows/packages/CCP4-6.3.0.1.msi

http://www.ccp4.ac.uk/tmp/tarballs/bin/Windows/packages/WinCoot-0.6.2.exe

It is important these packages are installed, as we otherwise haven't got time for the tutorials.

**The covered topics will be:**

Diffraction from protein crystals, reciprocal lattice and data collection

Symmetry in crystals

Symmetry in reciprocal lattice

Phasing (molecular replacement, MIR and MAD) and density modification

Refinement and validation

**Monday morning**

Diffraction and reciprocal lattice (Pernille Harris - 1 hour)

Symmetry in crystals and symmetry in reciprocal lattice (Michael Gajhede - 2 hours)

**Monday afternoon**

Data collection (Pernille Harris)

Tutorial in data processing and if time allows tutorial in coot.

**Tuesday morning**

Phasing and density modification (Osman Mirza - 2 hours)

Tutorial - molecular replacement

**Tuesday afternoon**

Refinement and validation (Pernille Harris - 1 hour)

Tutorial - refinement (continued from the morning)