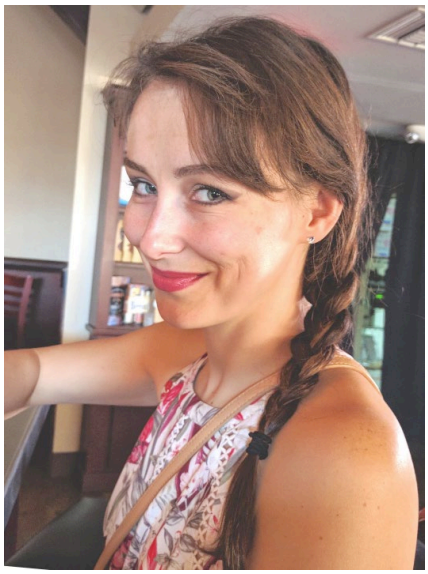
School of Physics and Astronomy

COLLOQUIUM



Dr Nadia Zatsepin
LaTrobe University

Time-resolved serial femtosecond crystallography with X-ray free-electron lasers

X-ray free-electron lasers (XFELs) produce uniquely brief (fs scale), transversely coherent X-ray pulses with about 10 orders of magnitude higher peak brightness than 3rd generation synchrotrons. In the decade since the first hard X-ray FEL came online, numerous unprecedented experimental modalities have emerged, particularly for time-resolved studies. Serial femtosecond crystallography (SFX) with XFELs has enabled high-resolution structure determination from solvated protein microcrystals at room temperature, without structure-altering radiation damage. A key advantage of time-resolved crystallography with XFELs is rapid reaction initiation using light or chemical mixing to probe protein dynamics on fs to second time scales. This talk will cover the latest developments in mix-and-inject serial fs crystallography with a focus on how it can help in understanding viral infection and antibiotic resistance.

Date:	Wednesday 25 March
Time:	2pm
Venue:	L1, Seminar Room 107, 10 College Walk, Clayton