

Prehistory

Neutron scattering (late 60s - 70s)



Terry Willis

Harwell opens up to the universities

N Crystallography of biological molecules

Brookhaven 'neutrons in biology' – crystallography, membrane diffraction.

*ILL science dominated by physics and chemistry
polymer chemists developed contrast variation for SANS on D11*

*Vitamin B12 Moore & O'Connor
Insulin Mason, Fuess,
Dorothy Hodgkin
(Ferrante Mk1)*

*Nucleosome core particle Pardon, Worcester
(Badger modified for SANS)*

Julia Higgins

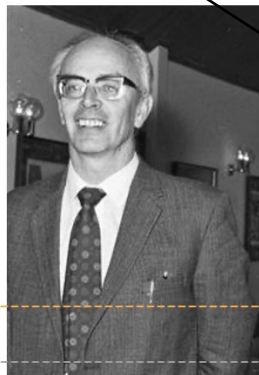


(UK, cradle of Structural Biology) 1973 Bernard Jacrot spent a 'postdoc' in Cambridge before returning as senior scientist for biology. Richard Henderson



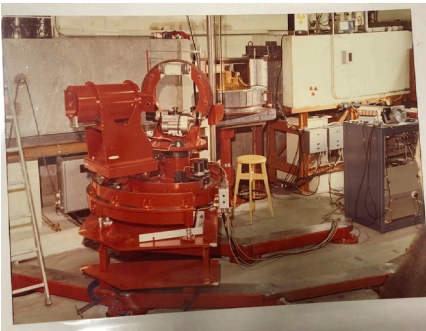
D16 now, Deme

*Mick Lomer
(UK associate director)
D16 (4-circle MK6) on a cold N guide, modified to study membranes
(Stewart Wilson)*



*(1979)...purple membrane:
a neutron diffraction study. J Mol Biol, 132, 181-91
(1980) Bacteriorhodopsin is an inside-out protein.
PNAS, 77, 5894-8.*

*(1978) ... selectively deuterated phospholipid bilayers
Nature, 271, 182-4.*



D16 1974

UK 50th anniversary at ILL

John White



*JWW paved the way for inelastic NS in biology.
Ghosh, R. E. PhD thesis 1972. Inelastic neutron scattering by molecular crystals. University of Oxford.
(Supervisor *John W White*)*

Sax Mason



*Instrument responsible of D8 : protein crystallography
(*David Blow*, report on N protein crystallography)*

Ron Ghosh



*A Computing Guide for Small-Angle Scattering
Vitaly user-friendly for biologists !*

Giuseppe Zaccai



D16 membranes

Peter Timmins



*First structural biologist with no neutron experience.
Collagen–mineral axial relationship (D11)
White, Hulmes, A. Miller & *P.A. Timmins*. Nature (1977)
(*EMBL outstation*)*

Jim Tabony

*Tabony, J. ... Microtubules. Nature 346: 448 (1990)
(Nonlinear dissipative mechanisms... gravity)*



Serendipity

Beginnings of
Structural Biology (UK)
↕
Biology @ ILL

Acta Cryst. (1948), 1, 138
The Fourier Method of Crystal-Structure Analysis
By W. COCHRAN
Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England
(Received 8 March 1948)

UK 50th anniversary at ILL