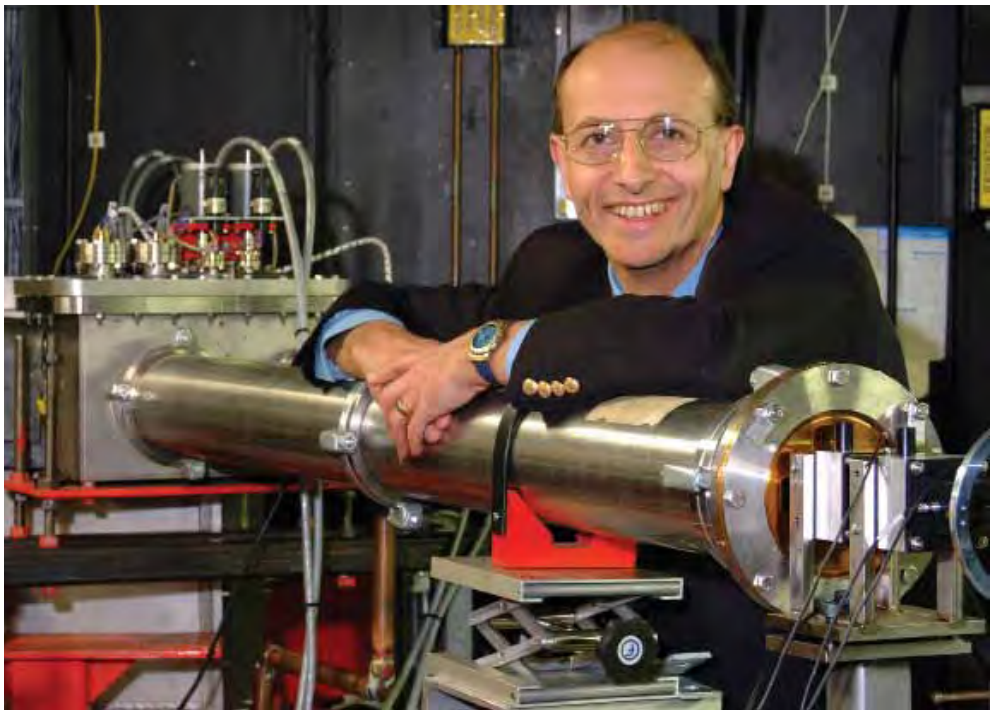

John R. Helliwell has been selected to receive the 2014 ACA Patterson Award for his pioneering contributions to the development of the instrumentation, methods and applications of synchrotron radiation in macromolecular crystallography. A long time member of ACA and Professor of Structural Chemistry at the University of Manchester, UK, John received his undergraduate degree in physics from York University, where he was mentored by Michael Woolfson and Peter Main. He then pursued a PhD in protein crystallography at Oxford, under the supervision of Margaret Adams. He was mentored by Charlie Bugg and Guy Dodson in the laboratories of Dorothy Hodgkin and David Phillips and was involved in the first experiments that used synchrotron radiation for macromolecular structural studies.

Since then his career has been dedicated to exploring new applications of synchrotron radiation and he has worked tirelessly to improve synchrotron and neutron facilities worldwide. Always driven by the desire to innovate and overcome existing limits, John expanded the use of anomalous dispersion techniques to explore new challenges in structural biology. He contributed to solving the phase problem by, among other things, introducing longer wavelength radiation to expand anomalous scattering applications for phasing to a wider range of scatterers. He is also recognized for having pushed forward the development of Laue methods for time-resolved studies and other applications, both in x-ray and neutron crystallography.

The truly innovative nature of his work is demonstrated by the large number of "firsts" encountered in a synopsis of his career. While working in Daresbury, UK, he led the design and realization of the first dedicated synchrotron radiation x-ray source (SRS) instrument for protein crystallography (1981) and of the first protein crystallography synchrotron radiation wiggler instrument (1984).

With USA scientists as his collaborators at SRS notable initiatives were in longer wavelength anomalous dispersion (Howard Einspahr), weakly scattering crystals (Steve Ealick), microcrystal diffraction (Britt Hedman and Keith Hodgson), virus crystal diffraction (Michael Rossman) and Laue diffraction (Keith Moffat). His work at SRS Daresbury was highlighted in *Scientific American*. In the late 80s and into the 90s he led the European working group for macromolecular crystallography for the ESRF Foundation Phase report and became Vice Chair and then Chair of the ESRF Science Advisory Committee.

From 1979 to 1999 he developed two-wavelength anomalous-dispersion phasing techniques using synchrotron radiation, particularly important for their applications in radiation sensitive cases. In 1995 he first demonstrated sharpened crystal mosaicity in microgravity grown protein crystals and in 1998 he conducted one of the first time-resolved Laue protein crystallography studies harnessing fast readout CCD detectors. In 2001-2002 he determined the first *de novo* structure of apocrustacyanin A1, solved with softer x-rays. In 2005 he initiated *ab initio* structure determination by MAD phasing of powder diffraction data and discussed the potential for extending the method to structures of large molecules containing anomalous scatterers.

He is the author of a classic book on protein crystallography *Macromolecular Crystallography with Synchrotron Radiation*, published by Cambridge Univ. Press in 1992 (available in paperback since 2005). He is a founding editor of the *Journal of Synchrotron Radiation* and was president of the European Crystallographic Association (2006 – 2009). He served as Editor-in-Chief of the IUCr journals (1996 – 2005) during which period *Acta Crystallographica Section E* and *Section F were launched*.

He has mentored some of the finest beam line scientists in the world, nurturing a community of researchers devoted to continuously advancing the technological and applicative aspects of synchrotron radiation.

He has traveled widely to promote and support crystallography internationally and has made special efforts on behalf of crystallography in the US. He has fostered several synchrotron and neutron projects in the US and served on many advisory and board panels to review synchrotron projects especially, in the last decade, at the APS. His special relationship with American crystallography and the crucial contributions he has made to improve synchrotron radiation applications from the very dawn of the synchrotron era were key for his selection as the 2014 Patterson award recipient. John will receive the award at the 2014 ACA meeting at Albuquerque, NM.

Chiara Pastore