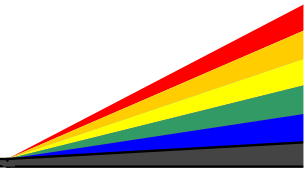
APS COLLOQUIUM SERIES



Speaker: **Keith Moffat**
The University of Chicago

Keith Moffat is the Louis Block Professor of Biochemistry & Molecular Biology, and from 1993 to 2000 he was Director of the Consortium for Advanced Radiation Sources, at the University of Chicago. He obtained his B.Sc. degree in physics from the University of Edinburgh and his Ph.D. from Cambridge University in 1970. After postdoctoral studies in rapid reaction kinetics with Quentin Gibson at Cornell University, he held faculty positions there until 1990, and founded the MacCHESS facility for macromolecular crystallography at CHESS in 1983. His research interests lie in reaction mechanisms studied by time-resolved macromolecular crystallograph, and in applications of synchrotron radiation to structural biology.

Title: **"Chirped Hard X-ray Pulses and the Frontiers of Ultrafast, Time-Resolved, Macromolecular Crystallography"**

The biological and biophysical frontiers of time-resolved biological crystallography will be discussed, based on recent results and the generation and potential uses of chirped X-ray pulses will be introduced. Today's fastest time-resolved macromolecular crystallographic experiments at synchrotron radiation facilities use a femtosecond, pump laser pulse, achieving a time resolution of around 200 picoseconds. However, certain important biological processes occur on the femtosecond time scale. The time resolution to the femto second domain could in principle be achieved by generating much shorter, 100 femtosecond X-ray pulses, as in the various proposed linear-accelerator-based sources. The time resolution may also be achieved through suitable chirped hard X-ray pulses of much longer total pulse duration.

Date: **Wednesday, November 7, 2001**

Time: **11:00 a.m.**

Location: **402 Auditorium**

Refreshments will be served at 10:45 a.m.