

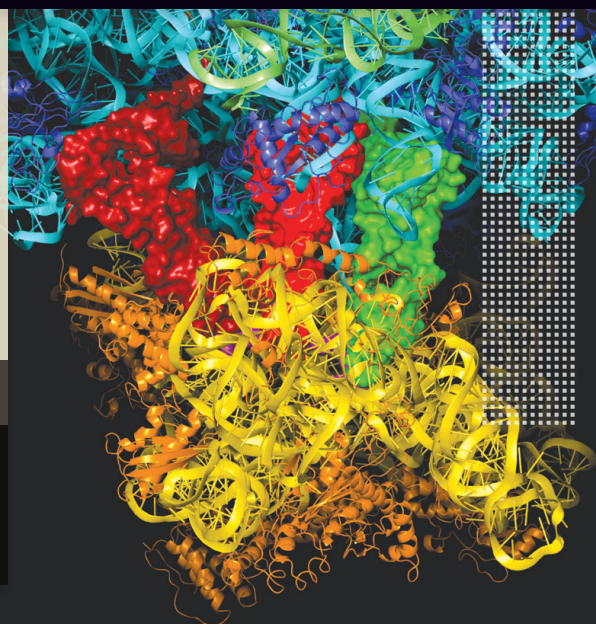


THE UNIVERSITY OF
WESTERN AUSTRALIA

Crystallography in Biology

THE INTERNATIONAL YEAR OF CRYSTALLOGRAPHY 2014 (IYCR2014)

A public lecture by Alice Vrielink, Professor of Structural Biology, School of Chemistry and Biochemistry, The University of Western Australia



The science of crystallography has had an enormous impact on our understanding of molecules, their structures, chemical and physical properties. The impacts of crystallography are felt daily on how we live our lives. Nowhere is there more evidence of this than in the area of biology. Not long after the first Nobel Prizes were awarded to Max von Laue in 1914, and the father and son team of William Henry and William Lawrence Bragg in 1915 was crystallography applied to the studies of a diverse range of biological molecules. Early work by Hodgkin on the structures of cholesterol, penicillin and vitamin B12 provided important insights into how these molecules functioned. The birth of the field of molecular biology was a direct consequence of the discovery of the double helical structure of DNA by Watson, Crick, Wilkins and Franklin. The first protein structures determined by Perutz and Kendrew opened the field of macromolecular crystallography. Subsequent structural studies of biomolecules have helped us understand fundamental biological processes such as how muscles contract, how cells divide, how proteins are made within the cell and how signals are transmitted and received between cells and tissues within our bodies. Crystallography has also helped us understand disease processes and design new and effective therapeutic agents to treat diseases and illnesses.

In this lecture Professor Vrielink will give an overview of the impact crystallography has had in the area of biology and medicine. She will describe the seminal discoveries as a result of crystallographic studies of biological molecules and how these discoveries are helping us to understand the mysteries of life.

About Alice Vrielink

Professor Alice Vrielink obtained her Bachelor of Science in Chemistry and Masters of Science in Physical Chemistry at the University of Calgary in Canada. She then completed a PhD in Physics at the University of London and a Diploma in Crystallography from Imperial College of Science and Technology, London. From 1994-2001 Professor Vrielink was an Assistant and Associate Professor at McGill University in Canada. She then continued her research as a Research Professor at the University of California, Santa Cruz. In 2007 she joined the faculty at UWA as Professor of Structural Biology. Alice's research focuses on how enzymes carry out their highly specific chemical reactions in life systems. Currently a major focus is on understanding processes by which bacteria evade the host immune system and generate drug resistance.

Event Details

Date: Wednesday 15 October 2014

Time: 6pm

Venue: Woolnough Lecture Theatre,
Geography and Geology
Building, UWA

Parking: P18&20, via Fairway entrance 2

Cost: Free, but RSVP essential via

[www.ias.uwa.edu.au/lectures/
crystallography](http://www.ias.uwa.edu.au/lectures/crystallography)



This lecture is part of the International Year of Crystallography lecture series at UWA, sponsored by the Institute of Advanced Studies and the School of Chemistry and Biochemistry.

Institute of Advanced Studies

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