



THE UNIVERSITY OF
SYDNEY

Haworth Lecture 2024

Professor Alison Rodger



Tuesday 13th August 2024

New Law Annex Lecture Theatre 106

About the Haworth Lectureship

Naomi's academic excellence, her dedication to teaching, her spirit of collegiality and her resilience in the face of challenges have left an important legacy in the School of Chemistry. The School remembers Naomi's life and work, with an initiative that will keep her spirit alive. The Equity Diversity and Inclusion Committee, following consultation with family and friends, has decided to commemorate Naomi's legacy to the School and University with the creation of the Naomi Haworth Memorial Lecture.

The Naomi Haworth Memorial Lecture will be delivered once a year by a female scientist who, in the opinion of the Equity Committee, has exemplified in their professional and personal life the characteristics that we associate with Naomi:

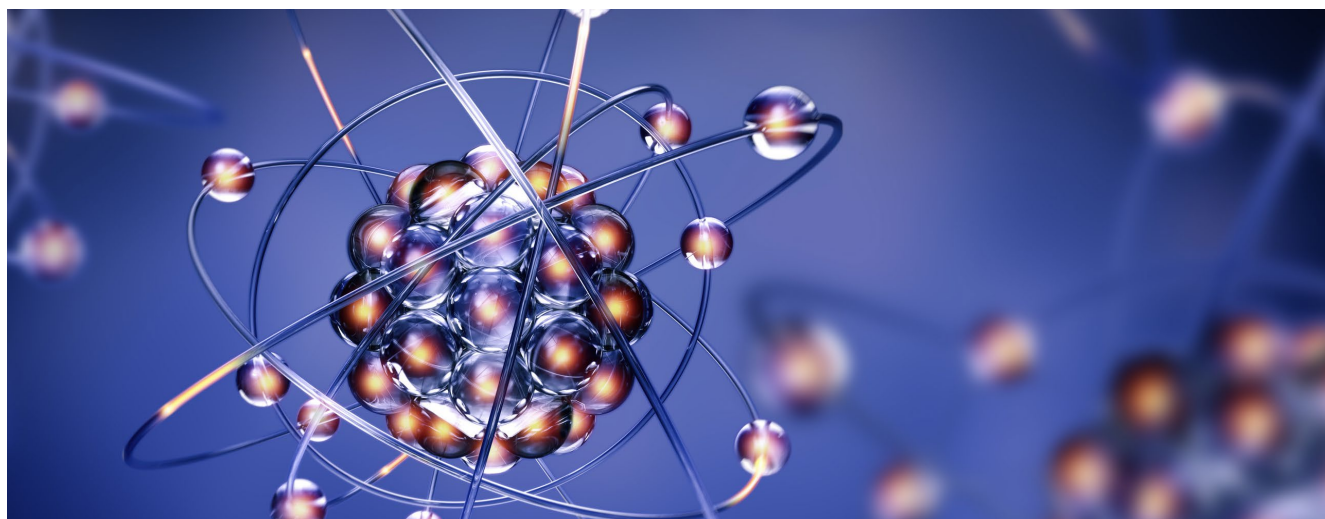
- Resilience in the face of adverse conditions
- Dedication to collegiality
- Equal opportunities and accessibility
- Science and Faith

Inaugural Lecture

2022

[Professor Michelle Coote](#)

Flinders University



Dr Naomi Haworth

On August 14th 2019, Naomi Haworth, a research and teaching fellow in the School of Chemistry, passed away at the age of 42 following a long fight with cancer.

Naomi was a computational quantum chemist. She used supercomputers to calculate chemical reactions and interactions - to predict chemistry that is too difficult to observe or measure directly.



Her skills were applied to many areas of chemistry: electrostatic catalysis, molecular redox switches, thermochemistry, enzyme structure, molecular wires, the shape and binding of proteins. Like many young scientists, Naomi moved from city to city, job to job. She worked at the University of Sydney, the Australian National University, the University of Erlangen in Germany, and the University of Melbourne. However, unlike most, Naomi's career was punctuated by many serious health problems. Over a professional career of about 17 years, she had good health for only a handful of these. Yet despite this, she produced an impressive body of work.

Naomi was a very talented scientist, respected by her colleagues, and her work was published in leading journals including Nature. The world of scientific research can be unforgiving of long career breaks, but Naomi persevered in research and was a valued teacher. In the School, as part of the Equity, Diversity and Inclusion committee, Naomi advocated for academics with career interruptions, and for increased accessibility to our school lecture theatres.

Professor Alison Rodger FAA FRSC FRACI

*Research School of Chemistry,
Australian National University*



Alison Rodger has just taken up the role of Director of the Research School of Chemistry at the Australian National University having been at Macquarie University since 2017 and previously at the University of Warwick for over 20 years. She received her BSc, PhD and DSc from the University of Sydney, MA from Oxford, DSc from Warwick, and BA from Chester. She was a Beatrice Dale Fellow at Newnham College Cambridge, an Overseas Scholar of the Royal Commission for the Exhibition of 1851, Unilever Fellow at St Catherine's College, Oxford, and Violette and Samuel Glasstone Fellow at St Hilda's College. At Warwick she was founding director of the Molecular Organisation and Assembly in Cells Doctoral Training Centre funded by the Engineering and Physical Sciences Research Council and head of Chemistry. She is passionate about supporting early career researchers, especially those working across disciplines. Alison enjoyed every minute of her 4 years on the Royal Society of Chemistry Council. Alison has been recognised by her election to Fellowships of the Australian Academy of Science (2021) and the Royal Society of Chemistry (2000) and the Royal Australian Chemical Institute (1997) and as an Honorary Member of British Biophysical Society (2019). She was nominated as a member of The Analytical Science Power List 2015.

Unravelling molecular and personal complexity: life viewed through polarised light

The world we live in is determined by the way molecules interact. However, it is often hard to measure what is happening. In this talk I will focus on new ways of using spectroscopic measurements, which are dependent on the nature of molecules and their environments, so data can be interpreted to give us clues as to how they are behaving. The focus of this talk will be on how we can use circularly and linearly polarised light to select out respectively chiral (helical/asymmetric) interactions, and oriented interactions between molecules. As well as describing what we can readily achieve with circular and linear dichroism for biomolecule characterisation, I will outline new developments with combining fluorescence spectroscopy with circularly and linearly polarised light, and how to use attenuated total reflectance spectroscopy to give (hopefully) reliable polarised infrared data. Applications will be to DNA, proteins, peptides and small molecules.

However wonderful spectroscopy is, our work always take place in the context of our lives. None of us live in a vacuum: how do we manage to build and maintain relationships both professional and personal? how do we keep our research funded? how do we deal with the positive and negative cultures in which we find ourselves embedded? Alison began her career in Australia. She married a fellow student, Mark, just before she started her PhD. After they completed their PhDs there was always the juggle of finding 2 jobs on the same continent, preferably within commuting distance, and later trying to bring up two daughters to be relatively normal people. I will reflect on how she managed some of the challenges of achieving scientific excellence in research and teaching, while endeavouring to be true to the values of her Christian faith, and always valuing her students and colleagues as individuals.

