

WESTERN SYDNEY UNIVERSITY



Nanoscale Organisation
and Dynamics Group

Beyond Fourier

Jeffrey C. Hoch

UConn Health, Farmington CT, USA

Abstract

The development of robust and efficient algorithms for non-Fourier spectral reconstructions have enabled dramatic changes in the way multidimensional NMR (and MRI) experiments are performed, yielding dramatic time savings as well as improvements in resolution and sensitivity. With non-Fourier methods, data can be collected at essentially arbitrary intervals, instead of the uniform intervals required by the discrete Fourier transform. In addition to describing these developments and ongoing research, I describe the development of the NMRbox platform that grew out of frustrating early efforts to promulgate non-Fourier methods. I conclude with broader remarks about the impact of computation in NMR structural biology, the burgeoning role of machine learning, and the implications for science – and scientists.

Profile

Dr. Hoch completed Ph.D. studies at Harvard University under the guidance of Profs. Martin Karplus and Christopher Dobson. He joined the Rowland Institute for Science in Cambridge, MA (USA) as one of its founding scientists at the invitation of Director Edwin H. Land (of Polaroid fame). 22 years later Dr. Hoch moved to the University of Connecticut Health Center, where he is Professor of Molecular Biology and Biophysics and director of the Gregory P. Mullen NMR Structural Biology Facility and the National Center for NMR Data Processing and Analysis (nmrbox.org). He co-heads the Biological Magnetic Resonance Data Bank (BMRB) based in Madison, WI (USA), and in 2018 was the Joseph Meyerhoff Visiting Professor of Chemical Physics at the Weizmann Institute of Science.

Staff and students at all levels are welcome to attend.

Venue and Time:

This talk will be held on Monday April 15 at 11 am at the Campbelltown Campus in Conference Room 2 Building 7 (CA-07.G.12). Also via **Zoom** <https://uws.zoom.us/j/915366354>

Enquiries:

Prof. William S. Price

Ext. 0404 830 398

e-mail: w.price@westernsydney.edu.au