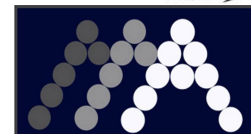


THE SALZBERG CHEMISTRY SEMINAR SERIES



The City College
of New York



Monday, March 27, 2023 @ 12:00 noon – MR1027

NMR Crystallography: An Atomic-Resolution Probe of Structure and Mechanism in the Molecular Sciences

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Abstract: NMR crystallography – the integrated application of solid-state NMR, X-ray diffraction, and first-principles computational chemistry – is developing as an atomic-resolution probe of structure and function across the molecular sciences. I will present two recent examples from our work that highlights this development. The first is to photomechanical materials, connecting the molecular-level structural rearrangement to the experimentally-observed macroscopic response. The second is to structural biology, revealing chemically-detailed structure and dynamics in the enzyme active site of tryptophan synthase, and how this has changed our understanding of its mechanism and reaction specificity.

References: *Chemical Science* **12**, 453-563(2021)
PNAS **119**, e2109235119 (2022)
PNAS **119**, e2114690119 (2022)

Biography: Len Mueller is Professor and Chair of Chemistry at the University of California, Riverside. Len received his B.S. in Chemistry from the University of Rochester (1988), C.P.G.S. in Natural Science (Chemistry) from the University of Cambridge (1989), and Ph.D. in Chemistry from the California Institute of Technology (1997). From 1996-1998 he was an American Cancer Society Postdoctoral Fellow at the Massachusetts Institute of Technology. Len's research interests include nuclear magnetic resonance spectroscopy as a probe of molecular and biological structure and dynamics.

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