***Structure and function of G-quadruplexes***

DNA is structurally dynamic in ways that have a consequence for biological processes. In this lecture I will discuss four-stranded DNA structures, called the G-Quadruplexes, that can be formed from G-rich, single-stranded DNA. Biophysical and structural experiments have shown G-quadruplexes can be stable under near-physiological conditions in buffer.  Synthetic organic probe molecules and engineered proteins have been invaluable for the exploration of G-quadruplexes.  I will discuss the evidence that G-quadruplexes actually form in human cells, along with our current understanding of what they do in biological systems and the molecular basis for how they may achieve this.