Chromosomal R-loops: who R they?

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R-loops, composed of DNA–RNA hybrids and displaced single-stranded DNA, play key roles in gene regulation and genome stability. Recent screening approaches—from genetic and siRNA-based methods to proximity labeling—have uncovered a diverse set of R-loop regulators, including chromatin modifiers, RNA processing factors, and helicases. In my talk, I will introduce the biology of R-loops and will also present our unpublished results that identify novel candidate regulators of R-loop formation and resolution, shedding light on their links to DNA repair and innate immunity. These insights are expected lead to new therapies for diseases associated with R-loop dysregulation.