

Sensing Biomolecular Interactions – from Single Cells to Single Molecules

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Transient molecular interactions are fundamental to nearly every biological process — and to the mechanisms behind both disease and therapy. Understanding these fleeting events is essential for drug discovery and diagnostics, where binding kinetics guide the selection of optimal molecules.

In this talk, I will present our recent efforts to develop innovative biosensing strategies — ranging from surface-based sensors and single-cell biosensors to single-molecule nanopore platforms — for the precise measurement of biomolecular binding events.