PROTON GATING OF CELL SIGNALING

In all domains of life, proton signals are essential, yet poorly understood regulators of cell biology and protein structure-function relationships. Prominent examples include coincident acid signals that regulate protein activity in endosomes, inflammatory zones, and tumor microenvironments. In my talk, I will report several breakthroughs that illuminate proton gating of G protein-coupled receptors, the largest and most therapeutically targeted family of transmembrane receptors in humans. I will present findings that showcase the novel data science, biophysics, and synthetic biology that drive our ambitious interdisciplinary research program.

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