Title: Technologies to Understand Cell–Microenvironment Interactions

Cells continuously interact with neighboring cells and their microenvironment, and these interactions shape cell behavior and fate. To understand these interactions, we develop technologies to capture microenvironmental interactions and profile the associated cellular responses. We developed a multi-bioluminescent reporter system (MRS-BLI) to monitor cancer cell proliferation and inflammatory and hypoxic responses over time (*J. Cancer Metastasis Treat.*, 2021). We also developed *s*GRAPHIC, a proximity-labeling approach to identify neighboring cells and characterize their transcriptomic responses in metastatic niches (*Nat. Commun.*, 2023). Together, these technologies provide complementary temporal and spatial perspectives on cell–microenvironment interactions.