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**Using Fluorescence Imaging to Understand how Cells Respond to their Environment**

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To remain healthy, cells must constantly monitor their environment to respond to cues such as changes in temperature, nutrient conditions and levels of hormones or the introduction of drugs. One of the most prominent monitoring system in cells is a family of proteins that span the plasma membrane, call G protein coupled receptors (GPCRs). When an extracellular agent binds to a GPCR, this information is communicated to the interior of the cell initiating a series of events that lead to cell proliferation, division or movement. Our lab has used live cell fluorescence imaging including super-resolution and correlation methods to trace the response of an external signal through the cell, and this talk will highlight some of our recent results.