Locoregional recurrence is a major problem for Head & Neck cancer patients (HNSCC). We recently completed a Phase 2a study of a novel photoimmunotherapy (PIT) approach for HNSCC patients. RM1929, is a combination of the anti-EGFR agent Cetuximab with the phthalocyanine dye IRDye700DX. The Cetuximab portion of RM1929 targets the compound to tumor cells overexpressing EGFR. High intensity red light is used to illuminate the abnormal tissue activating the IRDye700DX, which lyses the surrounding cells. The current lecture will explain mechanisms of PIT with RM1929, and describe some of the initial clinical results found in patients treated with this novel approach.