

**Cancer Center Support Grant – CCSG 2014**

“Development of theranostic antibody targeted delivery of radio sensitizers”

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Patients with locally advanced squamous cell head and neck cancers are treated with organ sparing concurrent radiotherapy and radiosensitizers (i.e. cytotoxic chemotherapy or EGFR inhibitors). However, overall survival remains suboptimal and combined therapy produces significant morbidity. We have recently discovered monomethyl auristatin E (MMAE) is a potent radiosensitizer and can be targeted to EGFR expressing cancers. In this proposal, we will evaluate the theranostic potential of cetuximab conjugated to both MMAE and a fluorophore for EGFR tumors. Moreover, we will develop antibody pre-targeted activatable cell penetrating peptides that intracellularly deliver radiosensitizers to tumors independent of receptor internalization kinetics.