

## Research Interests

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### ***Devraj Basu M.D., Ph.D.***

Dr. Basu laboratory focuses on improving survival for patients with human papilloma virus (HPV) positive oropharyngeal squamous cell carcinomas (OPSCC) while preventing the lifelong disabilities created by toxicity of current therapies. HPV+ OPSCCs exploits the antioxidant defenses intrinsic to mitochondria to neutralize the oxidative stress induced by hypoxia, nutrient depletion, spread, and current therapies. His lab discovered that tumors with high mitochondrial mass tend to have low HPV E6 oncoprotein levels and that increasing their E6 levels both decreases mitochondrial mass and sensitizes to standard therapy. Thus, tumors have a selective advantage in attenuating E6 expression during their evolution provided that concurrent gains in host oncogenic drivers are able to offset a reduction in E6's tumor-promoting activities. He is investigating whether E6 function balanced by an increased role for host oncogenic drivers underlies poor responses of some HPV+ OPSCCs to standard therapy and so creating distinct targetable vulnerabilities and less toxic agents for treatment-sensitive cancers, where current therapies leave lasting disability.

*Interactions with other trainers:* Dr. Basu has a unique program that bridges basic and translation science. He was recently promoted and so is still mentored by senior members of the training program. He interacts with Drs. Robertson, You, White, Weiner and Witze. He is one of our talented young surgeon scientist who has made a huge difference on connecting bedside to bench to bedside strategies.