

From: [Faculty Description of Research Project](#)
To: [DOCOM-Discovery Pathways Program](#)
Subject: New submission from Faculty Description of Research Project
Date: Wednesday, December 13, 2017 5:39:42 PM

Project title:

Investigating the tumor immune microenvironment in head and neck cancer

Faculty mentor name, email, department and phone number

Natalie L Silver MD MS
natalie.silver@ent.ufl.edu
Department of Otolaryngology, Head and Neck Surgery
352-273-5199

Research Project Description

Background: The incidence of human papillomavirus positive (HPV+) oropharyngeal squamous cell carcinoma (OPSCC) is increasing and has already surpassed the number of HPV related cervical cancers per year in the US. Although advanced HPV+ OPSCC patients have an improved 5-year survival when compared to HPV negative OPSCC patients, patients that recur after standard platinum-based therapy progress rapidly, have a poor prognosis, and few therapeutic options. The high mutational burden and inflammatory phenotype of head and neck squamous cell carcinoma (HNSCC) make it amenable to treatment with immunotherapy. In phase III clinical trials, checkpoint inhibitors (anti-PD-1 Abs) produced good clinical responses in a subset of HNSCC patients. Checkpoint inhibitors are becoming the standard of care for platinum-refractory recurrent/metastatic HNSCC. Despite this progress, more than 85% of patients with recurrent HNSCC are resistant to checkpoint inhibitors and have no further treatment options.

Hypothesis: We hypothesize that immune suppression and immune regulatory mechanisms are responsible for treatment failure in recurrent HNSCCs.

Methods: We will use immunohistochemistry and Next Generation Sequencing to investigate tumor samples from patients with primary and recurrent head and neck cancers.

Role for Medical Student: The student will help with clinical data collection and has the opportunity to learn tissue staining techniques.

Relevant publications: Jie HB, Gildener-Leapman N, Li J, et al. Intratumoral regulatory T cells upregulate immunosuppressive molecules in head and neck cancer patients. *British journal of cancer* 2013;109:2629-35.