Dr. Marco Giovannini awarded DOD-CDMRP Neurofibromatosis Research Program Grant

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Dr. Marco Giovannini, Director of the Neural Tumor Research Laboratory, and Dr. Andrea McClatchey, Principal Investigator at Massachusetts General Hospital Cancer Center, received a collaborative three-year grant on “Defining the Role of Macropinocytosis in NF-Mutant Tumors” from the Department of Defense Congressionally Directed Medical Research Programs. The Neurofibromatosis Research Program (NFRP) was established in 1996 when the efforts of NF advocates led to a congressional appropriation to fund research in NF.

Neurofibromatosis (NF) is a group of three genetically distinct disorders that cause tumors to grow in the nervous system. It also produces other abnormalities in the skin and bones. There are three types of NF: 1) NF 1 affects 1 in 3,500 people worldwide and is caused by a mutation in the neurofibromin gene, 2) NF2 affects 1 in 25,000 people and is caused by mutations in the Merlin gene, 3) Schwannomatosis is much rarer, affecting 1 in 40,000 people.

Drs. Giovannini and McClatchey will test the hypothesis that the macropinocytic proficiency of NF2- and NF1-deficient cells allows them to adapt and proliferate outside of their normal environment. They will examine the molecular basis of this cellular process, identify biomarkers of specific growth factor responses and test several specific ways to block this advantage as novel therapeutic strategies in preclinical studies carried out in cultured *NF*-mutant tumor cells and in NF2-mutant schwannoma mouse models.

This project developed as a natural collaboration between two labs that bring complementary expertise and a longstanding dedication to the successful treatment of neurofibromatosis. Drs. Giovannini and McClatchey groups have been collaborating in this endeavor for over two decades, most recently as part of a nationwide consortium dedicated to preclinical studies of NF. This work will ultimately benefit both NF2 and NF1 patients as it will identify novel causes, biomarkers and therapeutic strategies for multiple types of NF2- and NF1-mutant tumors.