Studying Hematologic Malignancies at a Genomic Level
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Professor Malek is a Professor in the Department of Internal Medicine – Hematology and Oncology. His research primarily focuses on describing Hematologic Malignancies at a genomic level, focusing on diseases such as lymphocytic leukemia and follicular lymphoma. Lymphocytic leukemia is a type of cancer that affects the white blood cells called lymphocytes and causes them to grow incorrectly and uncontrolled. Follicular lymphoma is a type of cancer that affects the follicle center of B-Cells causes a slow growing tumor to form. Professor Malek’s lab uses Genetic Characterization to attempt to create a relationship between the genomic damage and stability of a patient and their displayed phenotype. In the case of CLL (B-Cell Chronic Lymphocytic Leukemia), they have found, that genomic damage more precisely relates to patient outcome.

Their lab is known for its publications on cancer-causing gene information. One of the projects they are currently focusing on involves mechanistically describing P53, a gene that is involved is tumor suppression. It is their goal to discover the mechanisms that the gene is involved in and find out what goes wrong. While in its early stages, Dr. Malek said he hopes that his research will be able to one day improve upon the therapies given to the patients suffering from these diseases.

Dr. Malek’s lab relies on the DNA Sequencing Core for assistance, utilizing the Core’s Massively Parallel Sequencing to sequence the coding region of tumor genes. That data is then used for gene discovery. “The core has expertise and infrastructure no lab can afford,” Dr. Malek explained. Outsourcing sequencing is more “cost effective and efficient.” At the Core, obtaining results is as simple as submitting the genome to be sequenced and then receiving the results via email.