RNA Innovation Seminar
Monday, November 13th at 3:00pm
ABC Seminar rooms, Biomedical Research
Science Building (BSRB), 109 Zina Pitcher

Chandan Kumar, Ph.D.
Assistant Professor, Cancer Biology
MI-ONCOSEQ Clinical Sequencing Core Director
Experimental Pathology, Department of Pathology
Michigan Medicine

“Clinical Sequencing for Precision Oncology:
Growing footprint of RNA-seq”

Keywords: Precision oncology, clinical sequencing, RNA-Seq

Abstract: Precision oncology applies genomic analyses of tumor biopsies to
improve the diagnosis and treatment of cancers. Clinical sequencing efforts
performed under time and cost constraints, have progressively involved analyses
of hotspot mutations, small to large panels of actionable cancer genes,
ocasionally whole exome, and matched germline samples, but relatively rarely,
RNA sequencing. The MI_Oncoseq initiative of University of Michigan was one of
the earliest clinical sequencing programs to incorporate RNA-seq analyses to
provide a readout of aberrant gene expression, gene fusions, and more recently
expression of neo-antigens and tumor infiltrating lymphocytes etc. Using whole
exome capture probes, we developed an RNA-capture-seq methodology that
facilitated efficient use of poor quality RNA, including from FFPE samples, that
expanded the scope of RNA sequencing over a wide range of cancer cases and
sample types. This talk will provide a quick overview of the clinical sequencing
workflow focusing on the various application involving RNA-seq in real time clinical
sequencing. A brief discussion of ongoing developments/ future outlook will be
presented, followed by time for questions.