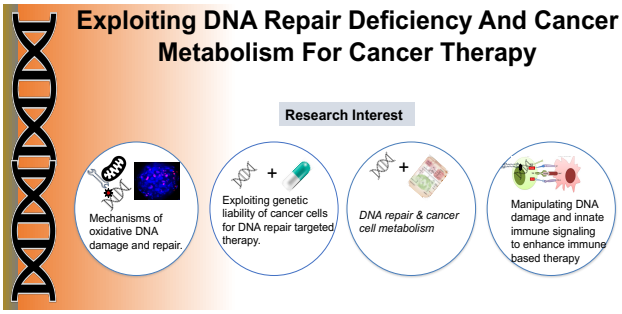

Most cancers treated with targeted therapy ultimately become resistant to treatment, stop shrinking, and eventually progress. Based on the improved understanding of the mechanisms on cancer initiation, promotion and progression model, targeted therapies are emerging as groundbreaking and promising treatment strategies. Dr. Kidane lab uses genetic tools, cancer genomics and metabolomics data approaches to uncover basic mechanism of genomic instability and cancer. *Moreover, Dr. Kidane lab developed genetic tools including animal and in vitro models to uncover mechanistic insight how DNA repair deficiency induces innate immune response and inflammation, and applied systems biology approaches to understand the activation and regulation of innate immune signaling.* His research program prioritizes pre-clinical research with strong clinical/translational relevance with an emphasis on tumor immunology in gastrointestinal cancer including stomach, colon, and pancreatic cancer. More specific areas of research interest include: -

- Oxidative DNA damage and repair
- DNA replication stress
- Targeting DNA repair deficiency in cancer therapy.
- Exploring DNA repair deficiency to elicit inflammatory signaling and enhance immunotherapy.
- Manipulating cancer cells metabolic demand to promote better treatment response.