The Department of Chemistry is pleased to offer the following research project for the summer of 2016. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and, if possible, develop a timetable for the twelve-week research period.

PROJECT TITLE: Bioanalytical Research

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Project Description

We are interested in development and applicability of various molecular tools for characterization of RNAs at posttranscriptional level. These include development of enzymes for qualitative and quantitative determination of chemical modifications in RNA by mass spectrometry or RNA-seq type high-throughput approaches, and development of protein tools as bait for isolating target RNAs from complex biological mixtures including those of gut microbiomes. These novel and high-throughput approaches will expand and enhance the currently available strategies for understanding the functional significance of a variety of chemical modifications on RNA, an area termed as epitranscriptomics. The WISE student engaged in such research studies will learn various bioanalytical and molecular biology techniques for RNA structure and function analysis, thereby gaining experience in biochemistry of RNA and proteins, their purification, and mass spectrometry. This research experience will help the WISE student to understand the interphase of chemistry and biology associated with gene expression processes and epigenetic regulation at RNA level.