**Plan for virome study**

1. **Draft title**

* First author: Yiseul Kim
* Objective: Understand the taxonomic diversity and functional potential of the ballast water virome and compare virome structures of ballast waters with those of local harbor waters using metagenomics
* Method: Viral metagenomic data isolated from the five ballast and three harbor water samples in the Great Lakes
* Potential journal: ISME
* Draft due date: June 30

1. **Draft title**

* First author: Qingpeng Zhang
* Objective: Compare virus metagenomic samples based on k-mer counting
* Method: We will use median k-mer frequency of sequencing reads to determine the similarity of different virus metagenomic samples. We will take account of two levels of similarity, one is the general genomic content level considering all the DNAs in samples, the other is the species level without the influence of species abundance. We can further extract the common genomic contents/species and unique genomic contents/species to determine what makes the samples similar or different.
* Potential journal: PlosOne
* Draft due date: June 30