**Literature Informatics: **

* Which proteins are related to Alzheimer’s disease?
* Where/who are the leading centers and scientists for Alzheimer’s research?

**Protein-centric Information:**

* Identify the human protein containing this short peptide sequence: **GPDGMPVIYHGHTLTTKIKFSDVLHTIKE** 
  + What is its function?
  + What is its calculated PI and molecular wt?
  + Which region of this protein is most hydrophobic?
  + Locate five experimentally verified Ser/Thr/Tyr phosphorylation sites in this protein.
  + Find the homologous mouse and fruit fly orthologs of this human protein and report the % protein shared identity.
  + How many protein domains are reported to be present in this human protein?
  + Find the location of its largest domain.

**Structure:**

* View the crystal structure of Chronophin (PDB entry: 2P69).
  + A variant of this protein with mutations in its amino acid sequence has been isolated (see link http://www.hsls.pitt.edu/guides/genetics/tutorials).
  + Can you predict any effect the mutations may have on its function?
  + Hint: Identify the amino acid residues which are in close contact (3.5 A) with PYRIDOXAL-5'-PHOSPHATE (PLP).

**Bioinformatics Resources:**

* Locate database(s) on G protein coupled receptors
* Find a suitable protocol for the expression of GST fusion proteins