

## **CISC 372 Homework for Wednesday, September 19**

**To be done in pairs/triples:**

- 1. Choose one collective communication operation from the following:**
  - a. MPI\_Bcast**
  - b. MPI\_Reduce**
  - c. MPI\_Scatter**
  - d. MPI\_Gather**
  - e. MPI\_Scatterv**
  - f. MPI\_Gatherv**
  - g. MPI\_AllGather**
  - h. MPI\_AllGatherv**
  - i. MPI\_AllReduce**
  - j. MPI\_AlltoAll**
  - k. MPI\_AlltoALLv**
- 2. Decide how to exemplify the effect of the communication, through before and after illustration of data values. You could develop a picture to present to the class, perform a human simulation, demonstration with props, perform a short play, or do a demonstration of analogy from real life. You will present your example in class next week.**
- 3. Characterize when you would use this communication in parallel programming through an example and general characterization. Look through your textbook and other resources to identify situations and think about it yourself.**
- 4. Write or find a snippet of MPI code that uses this collective communication. Bring the code snippet on a laptop for projection or email to me to project for the class.**

**Each member of the group should be involved in the presentation. Decide who will do which part of the presentation. The group will be graded on parts 2, 3, and 4. Then, each person will receive a grade based on the peer review and the final graded evaluation of the homework. The grade will be based on: content, originality and creativity, oral presentation of content.**