**Blue Waters Petascale Semester Curriculum v1.0**

**Unit 2: Parallel Computing Concepts**

**Lesson 4: Parallel Algorithms 1**

**Sample Assessment**

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1. What does it mean if an algorithm is **embarrassingly parallel**?
2. Assume you have a vector with one million numbers. Assume you also have a CPU with 4 processing cores. How could you use all 4 cores to sum up all the values in the vector utilizing a parallel approach to speed up the computation?
3. For each of the following options, would a **serial** or **parallel** program be better suited for the task, and *why*?
   1. Simulating galaxy formations
   2. Simulating the spread of disease
   3. Predicting the path of a hurricane
   4. Computing the tip for a meal at a restaurant
   5. Simulating planetary movements
   6. Converting temperature from celsius to Fahrenheit