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

**Unit 2: Parallel Computing Concepts**

**Lesson 4: Parallel Algorithms 1**

**Instructor Guide**

*Developed by Beau Christ for the Shodor Education Foundation, Inc.*



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This lesson introduces the idea of an **embarrassingly parallel** **algorithm** toward the purpose of getting students to start thinking about parallel design.

There is no formal code in this lesson, and it is not recommended to dive into a programming language at this stage. The goal is to introduce simple problems and their sequential solutions, and then give students time to think about a parallel solution before revealing the answer.

If your students are familiar with pseudocode and how to write it, you could introduce the three problems themselves, then have them first come up with the sequential pseudocode before approaching the parallel versions.

**Common Pitfalls for Students and Instructors**

A common pitfall is moving too quickly through this lesson. After presenting a sequential solution to a problem, it is recommended to pause to give students time to really think about how to parallelize before simply revealing the solution.

Otherwise, no other pitfalls should be expected.