

Parallel Programming in the Computing Curriculum

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Outline

- Butler's Environment
 - Liberal arts school
 - 4k students
 - Few students enter as CS majors
 - Great basketball team
- Computing Facilities
 - Big Dawg
 - Lab space



CSSE Setup

- Course setup
- CS 142 taught for STEM
 - Service course for STEM
- CS 452 parallel algorithm design



Curricular Goals for CSSE

- Early parallel thinking
- Stimulate growth of scientific computing
- Rigorous capstone experience for CS and SE majors



Introductory Parallel Programming

- Embarrassingly parallel tasks
- MPI-based
- Subdivide and recombine tasks
- Process communication
- Data distribution/stripping



Capstone Parallel Algorithms

- Parallel models
- Architecture and topology
- Data/task parallelism
- Sorting
- Trees
- Complex analysis
- Challenging projects



Questions



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