Efficient Multiprogramming for Multicores with SCAF

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- Scheduling and Allocation with Feedback
  - Runtime system for multiprogramming parallel processes
  - ~15% gains over equipartitioning
  - Targeting shared-memory systems
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- Problem?
  - Parallel runtimes try to let the OS handle parallel multiprogramming
  - **SCAF** runtime: automatic space-sharing
  - No porting, modification, recompilation
  - Policy: maximize sum of speedups
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Dynamic Allocation
- Realtime feedback
- Reward efficient processes

Serial “Experiments”
- Estimate serial performance to reason about efficiency