Research Report

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review of the issues to solve/What I needed to do

- Needed to understand the memory trace and let PoCC read in the trace and help memory analysis.
- Needed to work on a two pager describing the work I have been doing in the last 2 or 3 months (finished and sent)
- Others
  - Plos ONE (cardiac)
  - Lulesh (using INRIA PPCG)
  - PNNL benchmark

Progress on PoCC Memory Trace

- Ran the instrumented gemverOut.cpp
  - if N=4000, the output file becomes large (more than 2G)
  - Changed to smaller N for now
  - Tristan suggested the shape/dimension of the arrays should be considered as well
- Two related work from Clauss's group
  - Profiling Data-Dependence to Assist Parallelization: Framework, Scope, and Optimization (MICRO'12)
  - Online Dynamic Dependence Analysis for Speculative Polyhedral Parallelization (Euro-par'13)
  - Just got the idea, need to read in detail
- PoCC Code
  - Figured that Dependency Analysis should be the focus (CAnDL component of PoCC)
- No substancial progress achieved yet

The plan

- Getting to know how existing programs perform the memory/dependency analysis
- Getting to know its weakness
- Think where the memory trace should step in and help