What is Chapel?

- A new parallel language being developed by Cray Inc.
- Part of Cray's entry in DARPA's HPCS program

**Main Goal:** Improve programmer productivity
- Improve the *programmability* of parallel computers
- Match or improve upon the *performance* of current prog. models
- Provide better *portability* than current programming models
- Improve *robustness* of parallel codes

- Target architectures:
  - multicore desktop machines
  - clusters of commodity processors
  - Cray architectures
  - platforms from other vendors

- A work in progress
Who are we?

- Brad Chamberlain
- Steve Deitz
- Samuel Figueroa
- David Iten

Our Goals For Today

- Introduce you to the Chapel language in depth
- Give you experience…
  …using the Chapel compiler
  …writing Chapel code
- Get your feedback on the language and compiler
- Point you toward resources to use after today
Who are You?

- Name
- Affiliation
- Favorite language(s)
- Familiarity with C/C++/Java
- Interest in Chapel
- What you hope to get out of this tutorial

Outline

8:30 – Chapel Background
8:45 – Base Language
9:15 – Task Parallelism
10:00 – Break
10:30 – Data Parallelism
11:15 – Locality and Affinity
12:00 – Lunch
1:30 – Status and Future Directions
2:00 – Hands-on Session
3:00 – Break
3:30 – Hands-on Session (continued)
4:30 – Wrap-up
5:00 – Done