A Programmer’s Introduction to Chapel

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Safe Harbor Statement

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Organizational Notes

● Things to grab during the hands-on or a break:
  ● Chapel Quick reference sheet
    ● also available online
  ● Chapel microfiber cloths for cleaning screens/glasses
  ● Chapel stickers
  ● Cray Marketing Partner Network agreement
    ● optionally, for using Cray accounts
What is Chapel?

**Chapel:** A productive parallel programming language

**Goals:**
- Support general parallel programming
- Make parallel programming at scale far more productive
Who Am I?

- **Brad Chamberlain**
  - principal engineer at Cray Inc.
  - founding member and technical lead of the Chapel project
  - affiliate Computer Science & Engineering professor at UW

“Professional Brad”

“Typical Brad”
Who Are You?

- Place of Employment / Position?

- Types of Computations?

- Favorite Programming Languages / Models?
  - For work? For fun?
My goals today

● To teach you as much about Chapel as I’m able:
  ● What it is and how to use it
  ● Chapel resources
  ● Hands-on experience: on laptops / on a Cray
  ● Current status / Future plans

● To get your feedback on Chapel
  ● What aspects of it do you find attractive? Think need improvement?
  ● What would make Chapel more useful / usable for you?

● Ground rules:
  ● Please don’t hesitate to interrupt me with questions
  ● Give me feedback on the pace so I don’t go too fast or slow
Today’s Schedule

9:30: Arrivial Tea and Coffee
10:00: Welcome and Introductions
10:10: Chapel Background & Overview
11:00: Resources for Hands-on
     (online at: http://chapel.cray.com/tmp/ACCU2017)
11:15: Hands-on I: Hello worlds
11:30: Break
11:45: Base Language
12:15: Data Parallelism
12:45: Hands-on II: Ray Tracing
13:00: Lunch
13:45: Hands-on II (continued)
14:00: Task Parallelism
14:30: Locality / Affinity Features
15:00: Hands-on III: Multi-Producer / Consumer Bounded Buffer
15:30: Break
16:00: Data Parallelism with Locality: Domain Maps / Distributions
16:30: Q & A, Project Status, and Wrap-up
Questions at this (high) level?
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