SPARTA: A Parallel, Flexible, Open-source DSMC Code

Steve Plimpton & Michael Gallis
Sandia National Labs
sjplimp@sandia.gov & magalli@sandia.gov

DSMC15 Short Course
Sept 2015 - Kapaa, Hawaii

Welcome

- **Steve Plimpton**
  - 25 years at Sandia, Center for Computing Research
  - computational science, HPC and parallel computing
  - co-developer of several open-source packages

- **Michael Gallis**
  - 17 years at Sandia, Engineering Sciences Center
  - 25 years working with DSMC algorithms & codes

- **Management support for SPARTA in ES Center**
  - Dan Rader, Basil Hassan, Steve Kempka, Justine Johannes
Tell us about you

- What are your backgrounds?

- What do you want to learn from this short course?
Outline of short course

1:00-2:00 Intro and SPARTA basics (Plimpton)
2:00-2:45 Physical models (Gallis)
2:45-3:00 SPARTA advanced topics - part I (Plimpton)
3:00-3:15 break
3:15-3:45 SPARTA advanced topics - part II (Plimpton)
3:45-4:15 Validation & verification (Gallis)
4:15-4:45 How to modify/extend SPARTA for your applications (Plimpton)
4:45-5:00 Future directions (group discussion)