

# Panel

---

## Answering the Really Important Questions Once and For All

Rusty Lusk, moderator

Jean-Yves Berthou

Al Geist

Geoffrey Fox

Thilo Kielmann

Jean-Laurent Philippe

Vaidy Sunderam

# Exascale question

---

- When will we have a Linpack-exaflop machine?
  - Guess the year
  - Explain why it will take this long
  - Explain why it won't take longer
  - What will it look like? Architecturally? Physically?
  - When the first application reaches 1/4 exaflop on this machine, what programming technologies will it use? (languages, libraries, domain-specific languages, etc.)

# Programming question

---

- Why isn't everyone programming in D?
  - D is a proposed, and implemented, replacement for C, with built-in parallelism modules, "bringing the modern programming constructs of Python to C, without making the mistakes of C++ and Java." (See "The D Programming Language" book, or Googlit.)
  - What does your answer say about the adoption of new programming technologies?

# Fault-tolerance question

---

- What fault-detection, fault-avoidance, and/or fault-recovery mechanisms do you see in use now?
  - Which will be {used, necessary, impossible} on the next-generation machines?

# Big data question

---

- What is the "Big Data" version of the Linpack benchmark?
  - (We will never get anywhere without one.)

# Selfie question

---

- What are YOU currently doing to bring about the golden age of computational science?
  - Don't be shy.

# Megalomania question

---

- If you were in charge of a 100-million-euro (not billion) research program, how would you invest it?

# Escape-hatch question

---

- What is another "Really Important Question"?
  - Answer it.



