

# Questions

and comments

# Macrocosmos

# What's Out There?

- What's the Dark Matter?
  - Is it WIMPs? Axions? Other stuff?
- What's the Dark Energy?
  - Can we do some accounting?
  - What's its (and our) future?

# Who's Out There?

- Why the deafening silence?
  - Stupidity?
  - Wisdom?
- How, and in what form, will we get out there?

# Can We Put More Meat on Inflation?

- Mechanism?
- Structure?

# Microcosmos

# Can We Improve the Foundations?

- Unification, supersymmetry - LHC
- Breaking of symmetry
  - Electroweak (“Higgs”)
  - SUSY
- Families?
  - PQ symmetry
  - Random modulo anthropic??

# Can We Avoid Decadence?

- Can we do meaningful statistical physics using one sample from an enormous range of possibilities?
- Is there experimental life after LHC?
- What does “improved foundations” mean?
  - Logically simpler, better grounded hypotheses with more consequences?
  - Stricter fidelity to reality?
  - Something else?

# Can We Homestead Hilbert Space?

- Can we bring quantum computers off the drawing board?
- Can we replace chemistry labs with calculations?
- Can we beat photosynthesis at its own game?

**Mesocosmos**

# Can We Make Engineering More Life-Like?

- Fault tolerant, self-repairing, 3d and flexible
- “Self” (actually environmentally) powered
- Self-assembling, self-reproducing

# Can We Engineer Mind?

- Is there a fundamental limitation?
  - Of course not
  - Sensory and motor systems matter!
- Are there a few key tricks?
  - Probably
- Will the new minds quickly become the best minds?

# Can We Engineer Quintelligence?

**And in Conclusion ...**

# What Does It All Mean?

- Facts?
- Process?
- New powers?
- Hope and Inspiration