# PRACE for Science

## Richard Kenway

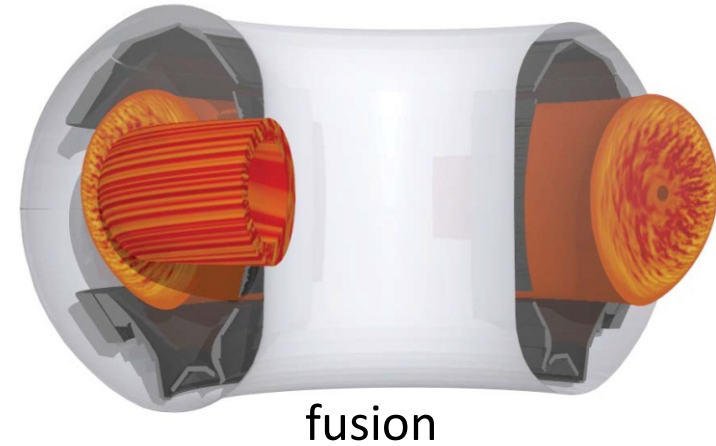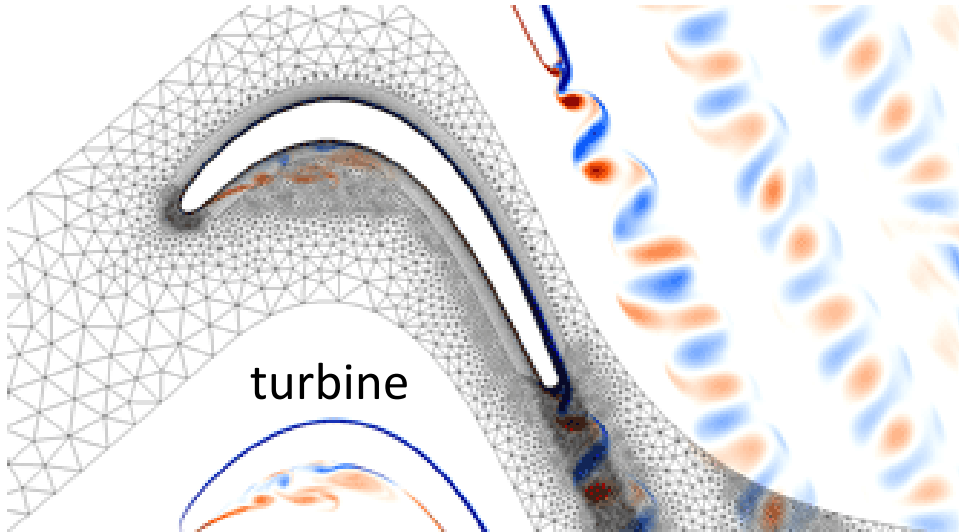### Chairman of the PRACE Scientific Steering Committee

# PRACE Scientific Steering Committee

José M. Baldasano (environment, Spain)

Kurt Binder (material science, Germany)

Paolo Carloni (life science, Germany)

Giovanni Ciccotti (material science, Italy)

Christoph Dellago (material science, Austria)

Sylvie Joussaume (environment, France)

Richard Kenway (particle physics, UK)

Ben Moore (astrophysics, Switzerland)

Gernot Muenster (particle physics, Germany)

Risto Nieminen (material science, Finland)

Modesto Orozco (life science, Spain)

Maurizio Ottaviani (plasma physics, France)

Michele Parrinello (chemistry, Switzerland)

Olivier Pironneau (mathematics, France)

Thierry Poinsot (engineering, France)

Simon Portegies Zwart (astrophysics, The Netherlands)

Kenneth Ruud (chemistry, Norway)

Wolfgang Schroeder (engineering, Germany)

Christof Schütte (life sciences, Germany)

Luis Silva (plasma physics, Portugal)

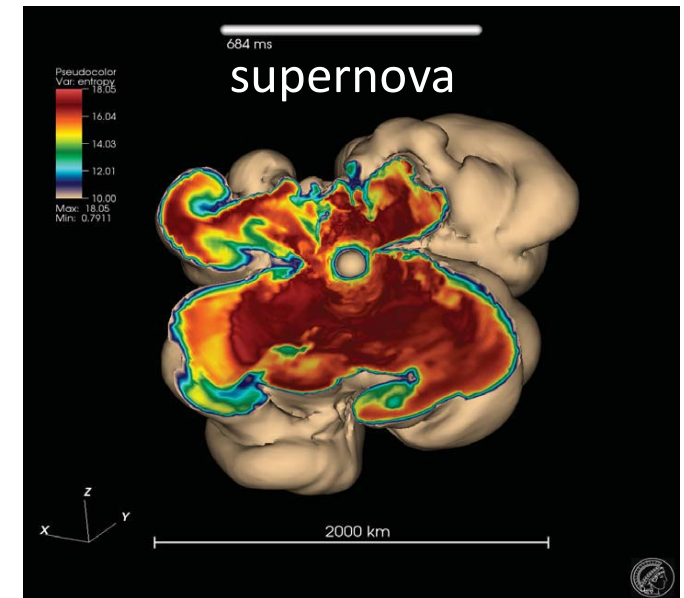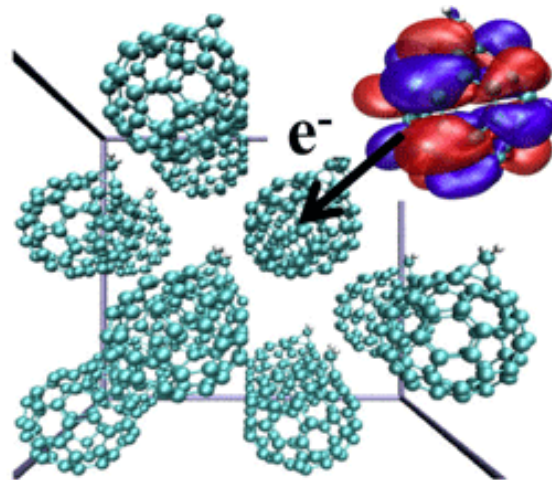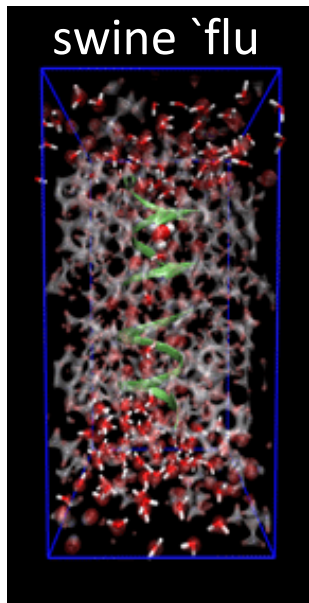Alfonso Valencia (life science, Spain)

- vision
  - PRACE should support the best computational science in the world
- strategy
  - world-wide competition subject to best-practice peer review
  - projects with the greatest potential for new knowledge that are only possible at tier 0
  - all-or-nothing allocations
- first 2 years
  - 103 major projects
  - 3 billion core hours
- extending to open industry research in Europe
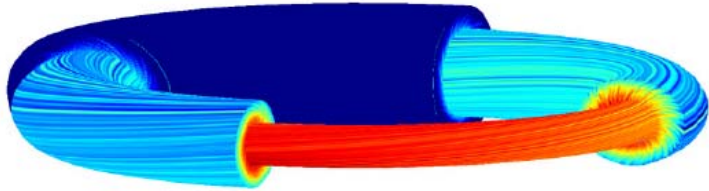- … and multi-year projects

# first results

turbine

fusion
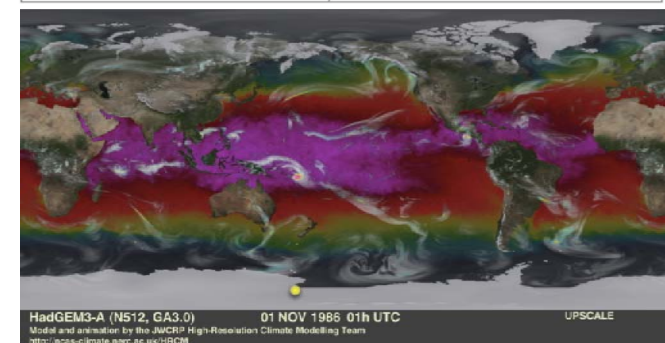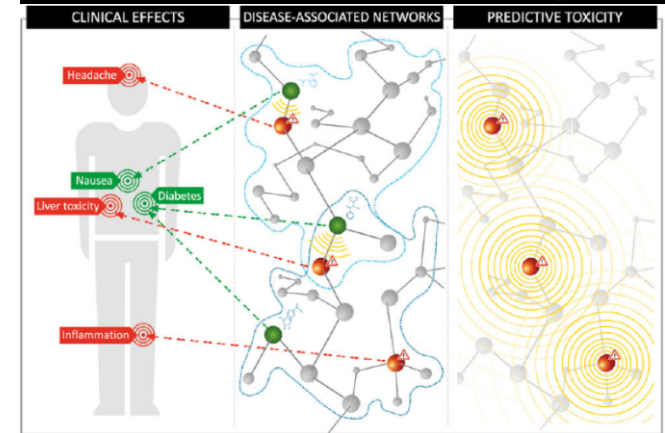
gene.rzg.mpg.de
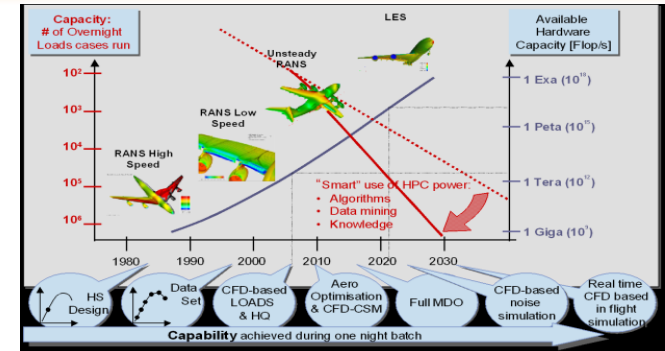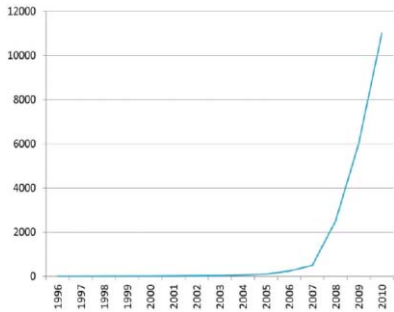
GENE

swine `flu

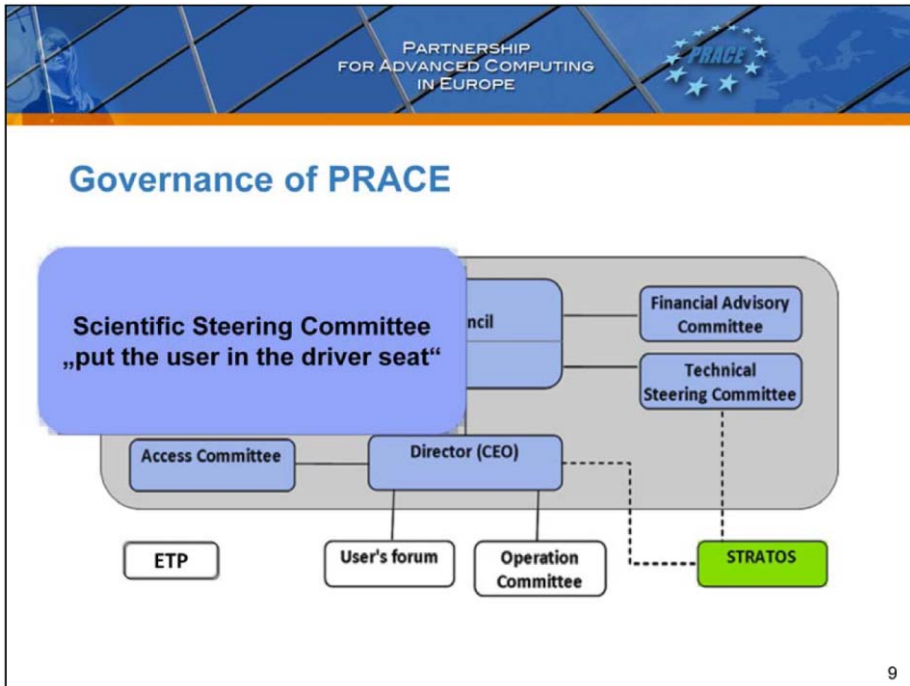organic solar cell material

supernova

# scientific requirements

- commitment to European-level HPC infrastructure over several decades + rolling 5-year technology roadmap

- approach exascale capabilities with a balanced infrastructure and support for both compute and data

- some dedicated facilities and/or integrated, flexible, responsive operations

- establish the principle of a minimum spend on applications software as a percentage of hardware spend

- Europe-level organisation of infrastructure and research

# it's time for science to lead



Achim Bachem, SC11



- scientific opportunities and requirements are evolving fast
- many paths lead from here … many are dead ends
- HPC market share is not sufficient justification for Europe

# PRACE for science

- maintain excellence

- add to national capabilities

- work with science

**CINECA**

# CONGRATULATIONS!

- PRACE tier-0 site

- Scientific Committee