International Supercomputing Conference-2015

Workshop on International Activities in
Big Data & Extreme-Scale-Computing

Opening Remarks & A Personal Perspective from a BDEC Road Warrior

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Expanding to Fill our Container (the Earth)

- Conventional HPC Focus and Attention (Geographical)
  - China
  - Japan
  - US
  - Europe
- Conventional HPC Focus and Attention (Domain)
  - Processors
  - Systems
  - Who owns what, produces what
  - Top end applications
  - System software and programming environments

Involvement Many-Nation HPC Community

- Latin America
  - Argentina
  - Chile
  - Brazil
  - Mexico
- Africa
  - South Africa
  - others
- Middle East
  - Saudi Arabia
  - Turkey
  - Egypt

- Asia
  - Thailand
  - South Korea
  - Philippines
  - Singapore
- India
- Russia
- New Zealand
- Australia

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Broadening International Engagement & Diversity

- Stimulating World-wide HPC engagement
  - Extending impact and value of HPC to broader world community
- Involvement and representation of the Many-Nation HPC community
  - Synergizing a community that is fully encompassing
- Expand domains of interest and motivations
  - Applications associated with national objectives
- Focus on cooperation, coordination, and needs
  - Computing without borders

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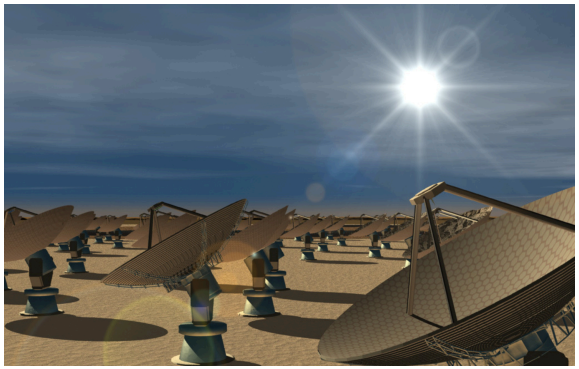
Stimulating World-wide HPC engagement

- There is a divide between the dominant HPC nations and the far broader international community; more of a rift valley than a mountain range but nonetheless an inhibitor to cross fertilization as equal partners
- A large skill force throughout the world in HPC, in particular of the emerging next generation
- While diffuse, the aggregate resources across the more than a dozen wider-world HPC interested nations is substantial
- Many shared needs across entire wider-world

Expand Domains of Interest & Motivations

- Application domains
  - Relevancy to intra-national needs
  - Geographical, hydrological, seismological, geological, renewable energy, meteorological, and climate
  - Supporting nescient science communities
  - Industry, engineering, and manufacturing
- Data analysis and visualization
  - Societal
- Wide area network infrastructure
  - Cross country (inter institution and resource)
  - International interconnect bandwidth
- Mass data storage and archiving
- Education and training



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Focus on Cooperation, Coordination & Needs

- Minimize the involvement-barrier to wider-world nations
- Extend access and engagement to multi-national cooperative initiatives
- Requires coordination initiated by leadership countries
- Embrace and benefit from interests, needs, and strengths
- Establish processes and initiatives for outreach

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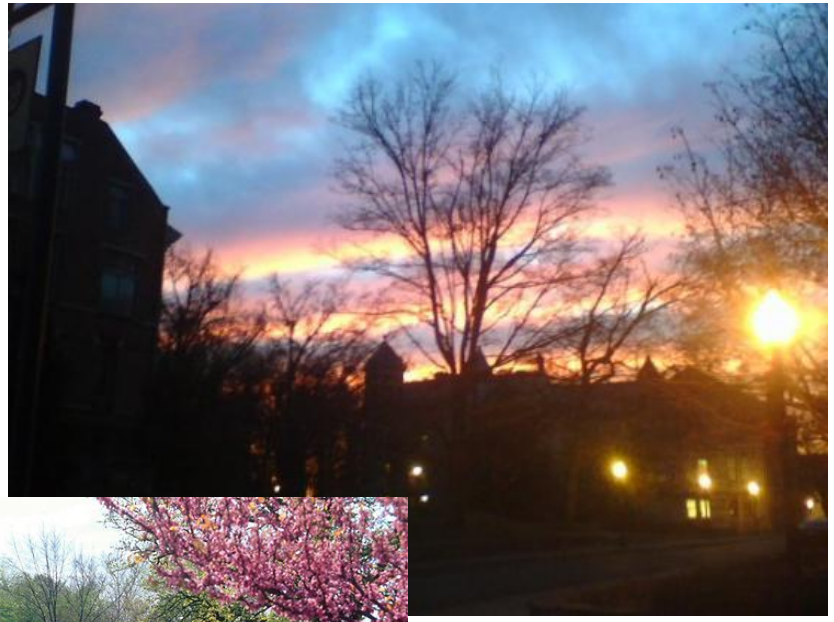

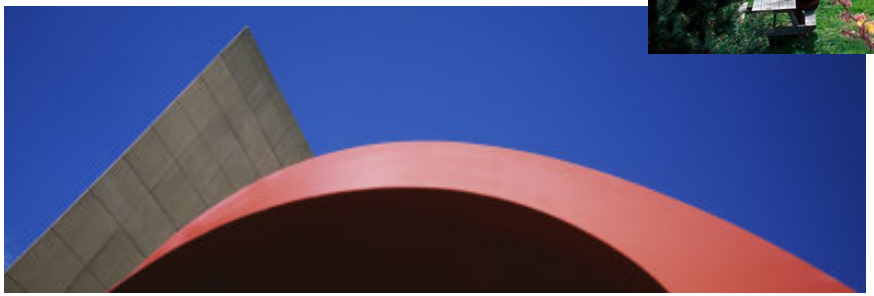

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