

# Introducing the Computing Community Consortium

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Ed Lazowska

Bill & Melinda Gates Chair in  
Computer Science & Engineering  
University of Washington

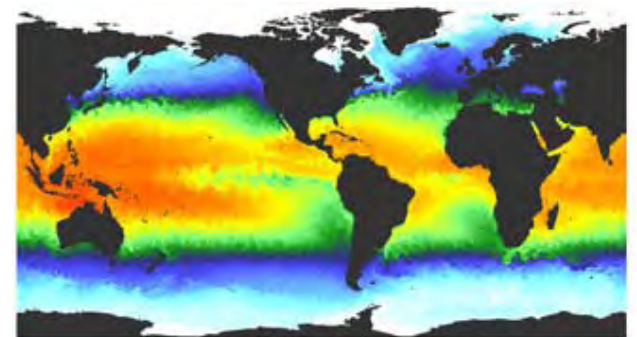
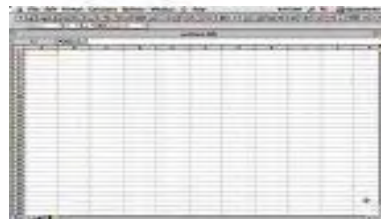
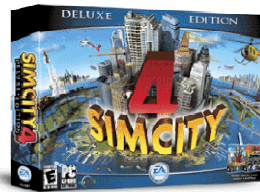
Chair, Computing Community Consortium

<http://www.cra.org/ccc/>



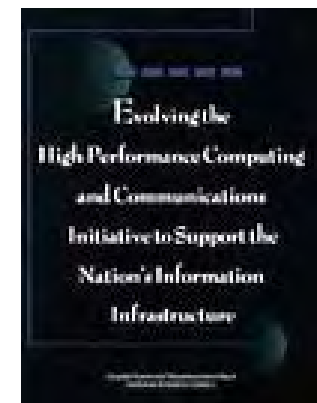
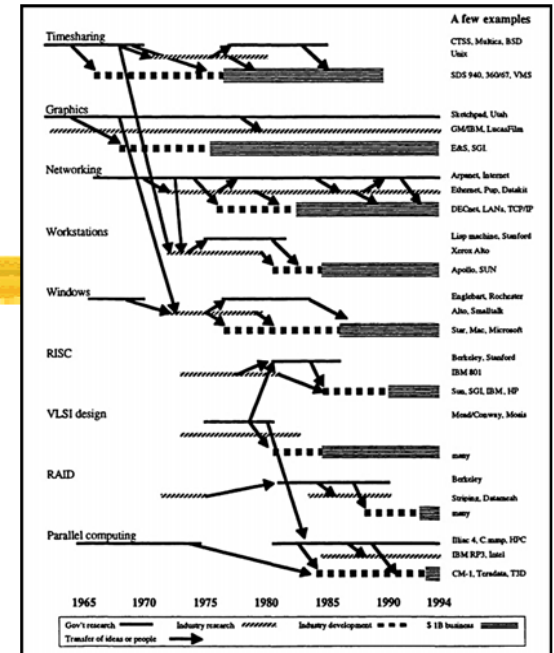
# Computing has changed the world

- Advances in computing change the way we live, work, learn, and communicate
- Advances in computing drive advances in nearly all other fields
- Advances in computing power our economy
  - Not just through the growth of the IT industry - through productivity growth across the entire economy



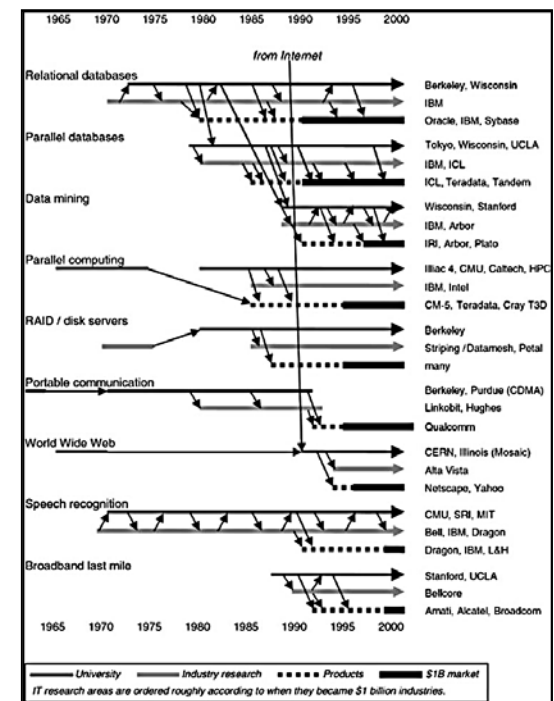
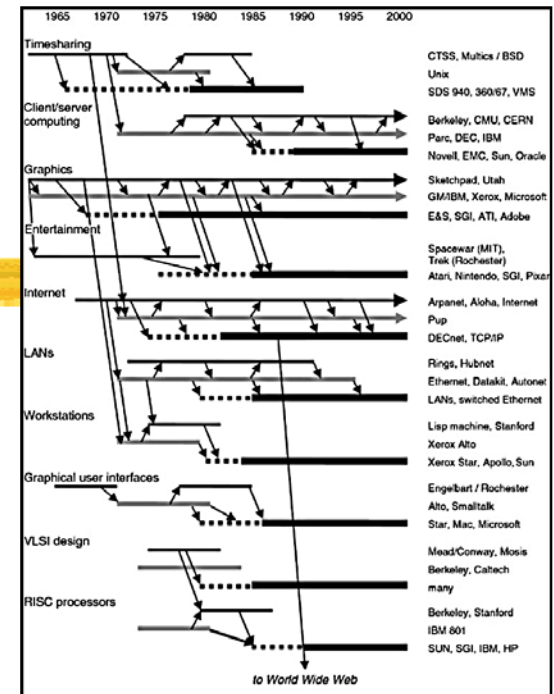
# Research has built the foundation

- Timesharing
- Computer graphics
- Networking (LANs and the Internet)
- Personal workstation computing
- Windows and the graphical user interface
- RISC architectures
- Modern integrated circuit design
- RAID storage
- Parallel computing



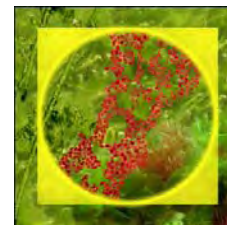
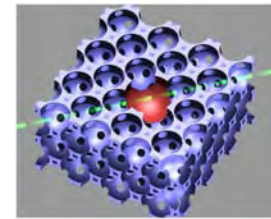
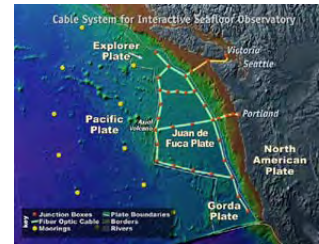
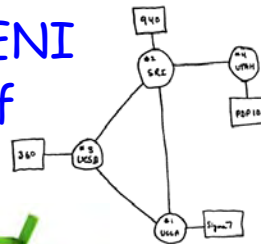
# Much of the impact is recent

- Entertainment technology
- Data mining
- Portable communication
- The World Wide Web
- Speech recognition
- Broadband last mile



# The future is full of opportunity

- Designing a next Internet - GENI
- Driving advances in all fields of science and engineering
- Wreckless driving
- Personalized education
- Predictive, preventive, personalized medicine
- Quantum computing
- Transforming the developing world
- Personalized health monitoring => quality of life
- Data-intensive supercomputing
- Neurobotics
- Synthetic biology
- The algorithmic lens => Cyber-enabled Discovery and Innovation





# We must work together to establish, articulate, and pursue visions for the field

- The challenges that will shape the intellectual future of the field
- The challenges that will catalyze research investment and public support
- The challenges that will attract the best and brightest minds of a new generation



# To this end, NSF asked CRA to create the Computing Community Consortium

- To catalyze the computing research community to consider such questions
  - To envision long-range, more audacious research challenges
  - To build momentum around such visions
  - To state them in compelling ways
  - To move them towards funded initiatives
  - To ensure "science oversight" of "at scale" initiatives



# The structure



- **CCC is all of us!**
  - This process *must* succeed, and it *can't* succeed without broad community engagement
- **There is a CCC Council to guide the effort**
  - The Council *stimulates* and *facilitates* - it doesn't "own"
  - The Council is in the final stages of creation, through an open process headed by Randy Bryant
    - Seeking diversity of all forms - not just "the usual suspects"
- **The Council is led by a Chair**
  - Ed Lazowska, University of Washington
  - 50% effort - not titular
- **The CCC is staffed by CRA**
  - Andy Bernat serves as Executive Director



# The desired outcome



- Broad community engagement in establishing more audacious and inspiring research visions for our field
  - Some will require significant research infrastructure (e.g., GENI); some will be new programs (e.g., CDI)
- Better public appreciation of the potential of the field
- Attraction of a new generation of students
- Greater impact!



Monday June 11, 6-7 p.m., Grand Exhibit Hall

**Christos Papadimitriou, UC Berkeley**

*The Algorithmic Lens: How the Sciences are Being Transformed by the Computational Perspective*

[Abstract](#)



Tuesday June 12, 6-7 p.m., Grand Exhibit Hall

**Bob Colwell, Independent Consultant**

*Future of Computer Architecture '07*

[Abstract](#)



Wednesday June 13, 6-7 p.m., Grand Exhibit Hall

**Randal Bryant, Carnegie Mellon University**

*Data-Intensive Super Computing: Taking Google-Style Computing Beyond Web Search*

[Abstract](#)



Thursday June 14, 6-7 p.m., Grand Exhibit Hall

**Scott Shenker, UC Berkeley**

*We Dream of GENI: Exploring Radical Network Designs*

[Abstract](#)



Friday June 15, 11:30 a.m. - 12:30 p.m., Grand Exhibit Hall (FCRC Keynote Talk)

**Ed Lazowska, University of Washington and Chair, Computing Community Consortium**

*Computer Science: Past, Present and Future*

[Abstract](#)