

# **America in the Age of Information— A Forum**

**Sponsored by the Committee on Information and  
Communications  
National Science and Technology Council**

**Randy Katz**

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# Forum Process

- **CIC Strategic Implementation Plan as starting point**
  - [http://www.whitehouse.gov/White\\_House/EOP/OSTP/NSTC/html/cic/cic-plan.html](http://www.whitehouse.gov/White_House/EOP/OSTP/NSTC/html/cic/cic-plan.html)
- **Refine and expand on the 6 Strategic Focus Areas**
- **On-going process: identify research opportunities into the next century**
  - Forum at Lister Hill Center, July 6-7, 1995
  - This session at Supercomputing '95
- **131 Participants from Academia, Industry, Govt**
  - White papers reviewed by committee
  - Breakout sessions
  - Workshop report (<http://www.hpcc.gov/cic/forum/>)
  - Web review and comment period

# Strategic Focus Areas

- **Global-Scale Information Infrastructure Technologies**  
— Larry Smarr, NCSA
- **High Performance Scalable Systems**  
— Greg Papadopoulos, SUN Microsystems
- **High Confidence Systems** — Mani Chandy, Caltech
- **Virtual Environments** — Steve Bryson, NASA
- **User Centered Interfaces and Tools** — Randy Katz, UCB
- **Education and Human Resources** — Randy Katz, UCB

# Principles for Govt-Sponsored R & D

- **Support basic early-stage research**
- **Create research infrastructure**
- **Foster creation of testbeds for applications and network research**

# Summary of Major Recommendations

- #0: IP's SFAs adequately cover the research in Information and Communications**
- #1: Stay the course in adv. network research; establish a national agenda for research infrastructure**
- #2: Continue HPC research, w/focus upon common programming model**
- #3: Insure the emphasis of High Confidence Systems is broadened beyond security**
- #4: Collaborative VEs to support appl areas while driving high performance systems**
- #5: Invest in research that broadens user communities**
- #6: Education and training as a driving appl for NII and UI technologies**

# User Centered Interfaces and Tools

- **Technological Opportunities**
  - Improved Access for All, in All Settings
  - Improved Effectiveness
  - Lower the Cost of Building User Interfaces
  - New Paradigms
  - Scientific Understanding
- **Major Recommendations:**
  - Focus Research on Effective Human/Device Communications
  - Evaluate Usability for Government Applications
  - Broaden the Accessibility of Computing Technology

# Education and Human Resources

- **Technology Opportunities**
  - Educational applications build on all IC technologies
  - Educational authoring and presentation tools
- **Major Recommendations**
  - Facilitate the transforming potential of "Information Access" and "Information Creation"
  - Exploit the potential of simulation and visual learning
  - Deconstruct the barriers between educators and scientists
  - Pursue testbed opportunities
  - Promote broadbased access
  - Reinvent computer science education
  - Address critical public policy issues