What about you?

Bryant W. York
AARCS Conference
Auburn University
July 21, 2007
Questions you may have

- Where do I fit in my community, the USA, the world?
- Where do I fit in the world of computing?
- What is expected of me?
- How can I be successful?
- Am I up to the challenge?
- How much more sacrifice will I have to make?
- What technical problems really interest me?
- Will society at large understand my contributions?
- Will society at large value my contributions?
Overview

• Environmental Conditions
• Getting Involved
• Opportunities for AA CS Researchers
• AA Grand Challenges
• Some Personal Principles
Environmental Conditions
**Essence of Your Condition**

- You are a member of a **small** minority population in the USA.

- You are the bearer of significant, **negative** stereotypes propagated by the media.

- You are the target of racial discrimination in just about all facets of American life:
  - Education
  - Employment
  - Housing
  - Voting
  - Legal System
The Racial Climate in the USA

- Charles Stuart Case (1989)
- Rodney King Case (1991)
- Florida Voting Irregularities (2000)
- Hurricane Katrina Aftermath (2005)
- Trent Lott, Mel Gibson, Michael Richards, Imus (2006 – 2007)
- Supreme Court Decisions (1954 – 2007)
Supreme Court Decisions

• Brown v. Board of Education (1954)
• Miranda (1966)
• Baake (1978)
• Adarand (1995)
# U.S. Population Projection

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2095</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Population</td>
<td>281M</td>
<td>552M</td>
</tr>
<tr>
<td>White (non-Hsp)</td>
<td>194M (69)</td>
<td>228M (41)</td>
</tr>
<tr>
<td>African American</td>
<td>35M (12)</td>
<td>72M (13)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>35M (12)</td>
<td>180M (33)</td>
</tr>
<tr>
<td>Asian</td>
<td>10M (4)</td>
<td>68M (12)</td>
</tr>
<tr>
<td>Nat Am/AK N/P. Isl</td>
<td>3M (1)</td>
<td>4M (.7)</td>
</tr>
</tbody>
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http://www.census.gov/ipc/www/usinterimproj/
But …

• Young
• African American
• Computer Science Researcher

In other words …

• Young, Gifted, and Black
Growth in African American PhD Computer Scientists

• Approximate Numbers
  – 1991 – 1996  41
  – 1997 – 2001  56 (2)
  – 2002 – 2006  58 (6)
  \[ \text{175 (8)} \quad \text{224 in pipeline} \]

• B.S. pipeline
  – 2001  3,500 AA B.S. in CS; 35,000 B.S. in CS
  – 2002  4,000 AA B.S. in CS; 38,000 B.S. in CS
How can I not only survive, but also thrive in this environment?
A Broader View of Environment

1. Your University
2. Your Local Community
3. Your State
4. USA
5. North America
6. The World
7. The Solar System
8. The Galaxy
9. The Universe
Get Involved
Some Points of Professional Involvement

• Coalition to Diversify Computing (CDC)
  – http://www.cdc-computing.org

• ACM, CRA, IEEE-CS
  – http://www.acm.org
  – http://www.cra.org
  – http://www.computer.org

• Computing Community Consortium (CCC)
  – http://www.cra.org/ccc/fcrc/
  – http://www.cra.org/ccc/rfp/

• Global Environment for Network Innovations
  – http://www.geni.net/

• Federal Funding Agencies – NSF, DoE, DARPA
• National Labs – Sandia, LBL, LLNL, LANL, ANL, ORNL, PNNL
• Corporations and Foundations – Microsoft, Google, IBM, Intel, HP
Coalition to Diversify Computing
http://www.cdc-computing.org

• Bryant York, past-chair
• Executive Committee
• Members
• Projects (Tapia Conference, …)
• http://ww.richardtapia.org

Nina Berry, Chair
Pam Williams, Chair-elect
Valerie Taylor, Past-past Chair
Greg Andrews, University of Arizona
Bill Feiereisen, Los Alamos National Lab
Susan Graham, University of California at Berkeley
Anita Jones, University of Virginia
David Kaeli, Northeastern University
Dick Karp, University of California at Berkeley
John King, University of Michigan
Ed Lazowska, University of Washington (Office of the Chair)
Peter Lee, Carnegie Mellon University
Andrew McCallum, University of Massachusetts Amherst
Beth Mynatt, Georgia Institute of Technology
Fred Schneider, Cornell University
Bob Sproull, Sun Microsystems Laboratories
Karen Sutherland, Augsburg College
David Tennenhouse, New Venture Partners
Dave Waltz, Columbia University

http://www.cra.org/ccc/rfp/
GENI Science Council

Tom Anderson, University of Washington, distributed systems and networking (member of GENI Planning Group)
Hari Balikrishnan, MIT, wireless networking
Joe Berthold, CIENA, optical networking
Charlie Catlett, Argonne National Laboratory, grid computing (member of CRA GENI Community Advisory Board)
Mike Dahlin, University of Texas, distributed systems
Stephanie Forrest, University of New Mexico, biological system modeling, security
Roscoe Giles, Boston University, educational technology
Ed Lazowska, University of Washington, systems (member of Interim CCC Council and CRA GENI Community Advisory Board)
Peter Lee, Carnegie Mellon University, software (member of CRA GENI Community Advisory Board)
Helen Nissenbaum, NYU, social, ethical, and political dimensions of IT
Jennifer Rexford, Princeton, networking (member of GENI Planning Group)
Stefan Savage, UCSD, networking and security
Scott Shenker, Co-Chair, UC Berkeley, networking (member of GENI Planning Group)
Alfred Spector, IBM (ret.), software
Ellen Zegura, Co-Chair, Georgia Tech, networking, including wireless (member of Interim CCC Council and CRA GENI Community Advisory Board)
GENI Community Advisory Board

Charlie Catlett, Argonne National Lab
Vint Cerf, Google
Susan Graham, University of California, Berkeley
Ron Johnson, University of Washington
Edward D. Lazowska, University of Washington
Peter Lee, Carnegie Mellon University
Ellen Zegura, Georgia Tech
Jeannette M. Wing, Assistant Director, CISE National Science Foundation
http://www.cs.cmu.edu/~wing/

Computational Thinking
http://research.microsoft.com/ur/asia/summit05/Presentation/PDF/6-Jeanette-Wing.pdf

Member, CISE Advisory Committee – Brian Blake
http://www.cs.georgetwon.edu/~bblake/
Opportunities and Challenges for African American CS Researchers
AA Grand Challenges
Broad AA USA Social Challenges

• End Racism in America by 2100
• Develop Our Children
  – Build self-respect and self-esteem
    • http://www.youtube.com/watch?v=rjy9q8VekmE
• Redefine Education for Our Children
  – Urban schools have failed
  – The Importance of Informal Learning (LIFE Center)
    – http://www.life-slc.org/
• Own Our Intellectual Property
• Increase the Dollar Turnover Rate in the AA Community
• Establish an AA “Think Tank”
Successful Economic Models

• Major League Sports
  – NBA, NFL, MLB
• NCAA Sports
• Black TV Industry
  – Bill Cosby, Oprah Winfrey, Wayans Brothers
• Black Music Industry
  – Quincy Jones, Berry Gordy Jr, P Diddy,
• Black Movie Industry
  – Morgan Creek, 40 Acres and a Mule
• Black Print Media
  – Ebony, Jet, Essence, Black Enterprise, O
Can we replicate these kinds of successes in the computing and IT industries?

What are possible roles for AA CS Researchers?
Stella Model
Technical Challenges and Opportunities
Basic vs. Applied Research
Technical Areas with Immediate or Near-Term Social Relevance

- Human-Computer Interaction
- Educational Technology
- Computer and Network Security
- Computer Forensics
- Data Mining
- AI and Computer Game Design
- Robotics
Some Examples of Socially Relevant Computing

• AADMLSS (Juan Gilbert)
  – http://www.aadmlss.org
• MindRap (Melanie West)
  – http://www.mindrap.org
• Culturally Situated Design Tools (Ron Eglash)
  – http://www.rpi.edu/~eglash/eglash.htm
• Urban Tapestries
  – http://urbantapestries.net/
• Applications Quest (Juan Gilbert)
  – http://www.applicationsquest.org/
• Electronic Voting (Juan Gilbert, Prime III)
More Examples of Socially Relevant Computing

• One Laptop per child in the AA Community

• Technology in Support of Community-Based, Participatory Design, Implementation, and Ownership of Urban Systems
  – TechComm\TechCommPDO2Slides.pdf

• Defeating Botnets
CNGrid, CANS, PRAGMA & GENI
Microsoft Research (1)

- Ubiquitous computing with mobile phones
- Socially relevant computing technologies for education
- Information access, privacy, and confidentiality
- Software transactional memory
- Solving environmental problems with computer science
- Beyond search – seeking and finding information in context
- New programming languages for manycore architectures
Microsoft Research (2)

- Universal access to Human Knowledge (or public access to digital materials)
- Social Networking: Pictures of traces of people, places, and groups
- Games First Pedagogy: Using games and virtual worlds to enhance programming education
- Computational photography
Some Personal Principles
Some Personal Principles

- Maintain the Utmost Integrity
- Always Strive to Do Something Positive
- People First
- Teamwork
- Think Big
- Be Globally Aware (Africa, Asia, South America, Europe)
- Mentoring
People First!

http://

Technology in Support of Community-Based, Participatory Design, Implementation and Ownership of Urban Systems
Think Big!

http://210.34.48.220/ocean
Be Globally Aware!

http://210.34.48.220/ocean
Importance of Role Models and Mentoring

• John O’Bryant
• Jackie Robinson
• Willie Mays
• Bill Russell
• Rosa Parks
• Wilma Rudolph
• JFK
• MLK Jr.
• RFK
• Malcolm X

• Burton White
• Michael Arbib
• David Marr
• Bill Wulf
• Angela Davis
• Badi Foster
• Valerie Taylor
• Roscoe Giles
• Juan Gilbert

The Colors of My Life

CS 1 with Mr. Kelso (1951)
Conclusion

I am depending on you

Keep your eyes on the Prize
The End