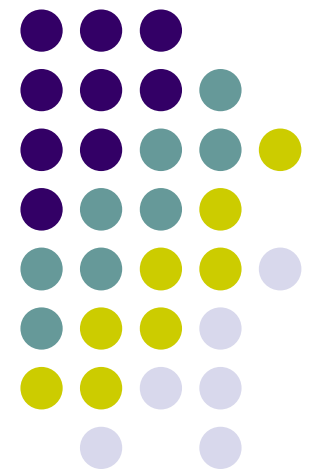
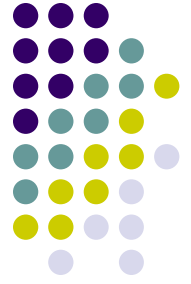


# NCCCS Environmental Scanning Forum

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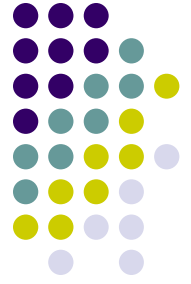
Presented at  
2005 Regional Scanning Forums  
August 3, 11 & 17





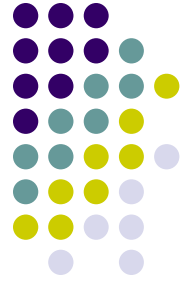
# Scanning Forum Purpose

- Official kick-off to NCCCS Strategic Plan 2007-09
- Engage cross-section of community stakeholders
- A collaborative process to identify key environmental trends anticipated to impact NCCCS programs & services
- **Outcome:** To gather feedback that will be used to narrow & focus the planning assumptions that will become the foundation of the 07-09 Plan



# Overview

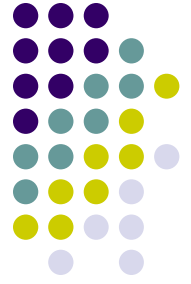
- College presidents asked to nominate **community leaders** with **knowledge** of & **expertise** in the external college environment
- **200+** individuals were identified
- Attending **three Regional Scanning Forums** across the state
- Representing **almost half** of the 58 NCCCS institutions
- Wealth of knowledge and experience



# Methodology

- Consulted with **NCCCS experts** in each of our divisions
- Asked them to **recommend** publications, reports, articles, and online materials where trend information might be located
- **P.A.R.E. staff** consulted these and other resources to develop the **trend analysis**
- No conclusions, judgments, or determinations
- Reference list

# Key Reports, Publications & Sources



- **CC Benefits Report:** *socio-economic impact study*
- **The Futurist:** *bi-monthly magazine, neutral clearinghouse*
- **NC Department of Commerce**
- **Bureau of Labor Statistics**
- **Society for College & University Planning**
- **State of the South Report 2004:** *15 state region*
- **Measuring Up 2004:** *National Center for Public Policy & Higher Education state report card for higher education*
- **Staying a Step Ahead: Higher Ed Transforming NC's Economy:** *interim report*
- **NC Atlas Revisited:** *updates of state trends & patterns first published by the UNC Press in 2000*



# Agenda

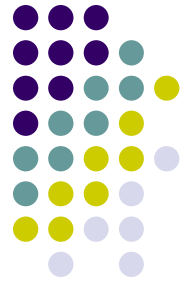
- Morning Session
  - Overview of environmental trends
  - Six key areas: Demographic, Socio-cultural, Political, Economic/Fiscal, Technological, Educational
  - Our perspective; our analysis
- Afternoon Session
  - Your feedback
  - **What trends should we be most concerned with?**
  - Did we get it right?
  - Did we miss anything?

# America's Community Colleges



- 11.6 million **credit** students; 1157 institutions
- Average **age**: 29 years old
- 42% under the age of 22, up from 32% a decade ago
- 58% women; 42% men
- 46% of all U.S. **undergraduates**; 45% of all **first-time freshman**
- 47% of **black undergraduates**; 56% of **Hispanic**
- 65% of all new **healthcare workers** trained
- 85% of **first responders** trained

# NC Community Colleges



- Third largest community college system in nation
- 779,228 students; 58 institutions
- Average **age**: 30 years old
- **Credit**: 62.5% female; 37.5% male
- **Non-credit**: 48.9% female; 51.1% male
- Credit: 26.3% black; 2.6% Hispanic
- Non-credit: 23% black; 8.2% Hispanic
- More than **2/3 students work** while attending school
- More than 20,664 HS students received **tuition-free community college courses** in the past year
- 27% enrolled in some form of **distance learning**

# “Colleges that really work” for NC



- **Workforce Development**

- NCCCS colleges provide approximately 95% of all first responder training
- Job training to 10,117; free, customized training to 121 new & expanding industries
- 68,799 Small Business Center clients served
- 99.47% of completers employed within one year

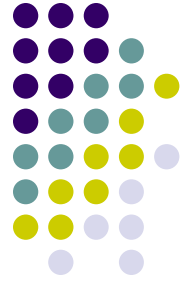
- **Literacy & Basic Skills**

- Basic Skills: almost 141,000 adults enrolled
- One in every 5 NC HS diplomas conferred



# Socioeconomic Benefits

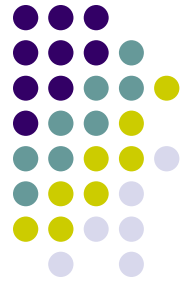
- NCCCS colleges account for \$14.6 billion of all annual earnings in NC state economy
  - Operations & capital spending
  - Higher earnings due to past instruction
- **Student** benefit:
  - Every credit earned = \$127 per year
  - Every year attended = \$3,741 per year
  - 18.6% rate of return
  - 7.3 year payback period



# Socioeconomic Benefits

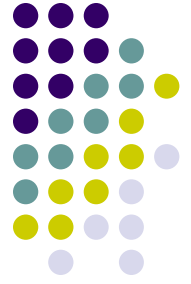
- **Social** savings
  - \$184.1 million in avoided costs -- improved health, reduced crime, reduced welfare/unemployment
- **Taxpayer** benefit
  - 16.8% return on investment
  - Every dollar invested returns \$2.74
  - 7.7 year payback period

# Demographic Trends: Global Context



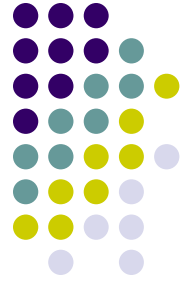
- **Population growth**
  - World population will double in the next 40 years
  - 95% of increase will be in developing countries
  - Declining birth rates in industrialized countries
- **Increasing lifespans**
  - In most countries, people live longer
- **Increasing urbanization**
  - By 2015 more than half world's population will be urban
- **Increasing cross-border migration**
  - Legal & illegal immigrants now account for more than 15% of population in more than 50 countries

# Demographic Trends: U.S. Context



- Declining birth rates
- **Aging** population
- Evolving **generation gaps**
  - Computer literacy
- Widening of economic disparities tied to education
  - **Educational gaps** reduce individual opportunity & shortchange US scientific enterprise
- Growing “**ethnic mosaic**”

# Demographic Trends: North Carolina Context



- **Population growth**
  - 2000-04 growth 6th largest in the nation
  - 17% increase 2000-2010 vs. 12% nationally
  - Between 2000-2030: a 55% increase (12 M)
  - Largely in metropolitan areas: Charlotte & RDU
  - In-migration of Hispanics & Asians
  - Aging of the Baby Boom Generation + influx of retirees
  - Increase in 65+ population segment



# Net Migration

- Most dynamic element of NC population growth
- **In-migration**: 71% of NC growth between 1990-2000
- Between 1995-2000, NC ranked **3rd in the nation** for net domestic migration: NY, FL, CA, MD, NJ, OH, PA, VA
- NC ranked **1st in rate of increase in foreign-born** population
- Mostly from Gateway states of CA, NY, FL, TX
- Most from **Mexico**, smaller number from **Asia**

# Distribution of Change



- Strongest growth in **Piedmont corridor**, in and around the state's largest metro areas
- Other metro areas, such as **Wilmington**, also recorded substantial increases
- **Some rural counties**, mostly on the coast or in the mountains grew faster than the state in general
- Otherwise, **slow growth was the rule**
- **Troubling trend**
  - Between 1990-2000 only 3 counties lost population; 2000-2004 this increased to 16
  - Many losing counties concentrated in NE, extending from some coastal areas inland onto the Inner Coastal Plain.



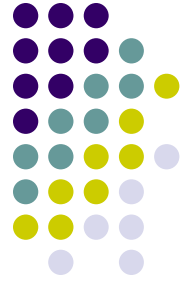
# Age Structure

- NC is getting **older**
  - Aging baby boomers + growing popularity as a retirement location
- Median age of **less than 34**: metro areas, college & university areas, military bases
- Median age of **more than 42**: western mountains or several coastal counties
- Dramatic increase in the proportion of population that is **65 or older**
  - Expected to rise from roughly 10% of the total population in 1980 to 18% in 2030



# Economic/Fiscal Trends: Global Context

- **Globalization**
  - A networked global economy driven by largely unrestricted flows of information, ideas, cultural values, capital, goods, services & people
- **Sustained** period of global **economic growth** predicted through 2015
- Broadly-based, including industrialized & many developing countries
- **Strongest** among “emerging markets:”  
**China & India**



# Economic/Fiscal Trends: Global Context

- **All boats** will not be lifted
  - Sub-Saharan Africa, Middle East, parts of Latin America will continue to suffer
  - Those left behind will face political instability & cultural alienation that may foster political, ethnic, ideological & religious extremism
- Information revolution will make persistence of **poverty more visible**, & **regional differences** remain large
- Global economy **prone to periodic financial crises** but capacity to correct itself will remain strong

# Economic/Fiscal Trends:

Bureau of Labor Statistics

U.S. Economic Outlook Through 2012



- **Sustained recovery**
  - On heels of bursting tech bubble, 9/11 attacks, stock market losses, stagnant job markets, corporate accounting scandals, uncertainties in Iraq
- **Personal consumption spending** , 2/3s of all economic activity, will grow
  - Health care expenditures a major contributor
- **Exports** of goods & services projected to grow 5.7% annually

# Economic/Fiscal Trends:

Bureau of Labor Statistics

U.S. Economic Outlook Through 2012



- **Imports** to grow at 5.2% rate
  - much lower than 8.7% growth in 1992-2002
- Continued **Trade Deficit**
  - A continued increase in trade surplus for services will not off-set even larger deficit in goods.
- **Disposable income** projected to increase at an average annual rate of 4.3%
- Civilian household **employment predicted to increase** 1.2% per year

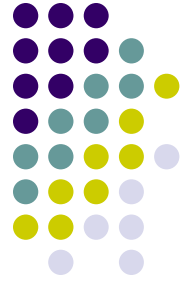
# Economic/Fiscal Trends: N.C.Context



- 1990s: NC economy grew more rapidly than all but 8 other states
- Fueled by strength in manufacturing & high-tech sectors
- Ended in with Recession of 2001
- NC more negatively impacted by recession than nation as a whole

# Economic/Fiscal Trends:

## N.C. Context



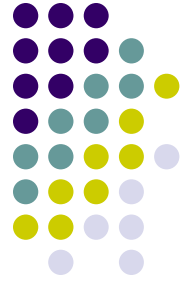
- NC economy challenged by **transition to the new economy**: globalized markets, knowledge economy, Internet revolution, outsourcing, foreign competition
- Worsening economy didn't stop **flow of migrants** into the state
- **Imbalance** of population & job growth
  - Increased unemployment rates
  - Stagnant wages
  - Reduced tax revenues

# Economic/Fiscal Trends: N.C. Context



- Major **restructuring** of the NC economy
  - Among the **last regions in the nation to de-industrialize**: move from manufacturing to services-based economy
  - Shift from “Farm & Factory” to “Knowledge Economy”
  - NC long dependent on **low-wage manufacturing employment**
  - **Geography** of knowledge industries different from geography of manufacturing
  - Small, isolated towns not feasible locations

# Economic/Fiscal Trends: N.C. Context



- Skills possessed by manufacturing workers **not easily transferable** to the Knowledge Economy
- **Wake & Mecklenburg Counties**: 74% of total job growth from Jan 97 to May 2004
- Concentration of growth best explained by location needs of knowledge-based firms
- **Raw materials of knowledge production**: skilled labor & information most easily obtained in large cities

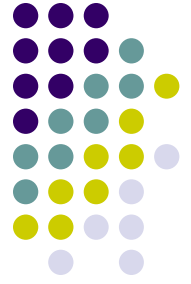
# Economic/Fiscal Trends:

## N.C. Context



- By 2010, NC projected to add 3/4 M to the workforce
- Most growth in **services** occupation
  - office jobs to janitorial services
- Likely to be substantial growth in **professional & technical** fields
  - education, health & information technology
- Considerable growth in **management & financial** positions

# Economic/Fiscal Trends: N.C. Context



- Emerging areas with great **potential**
- **Advanced materials & manufacturing:**
  - Making a product that involves high level of technology
  - Applying new materials/technologies to processes of making lower tech products
  - Chemicals & plastics, nanotechnology
- **Biotechnology & pharmaceuticals**
- Computing, software, and the Internet
- Designs & arts, logistics & distribution

# Economic/Fiscal Trends:

## N.C. Context

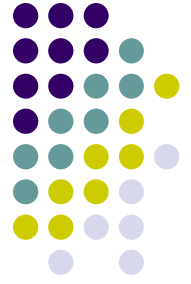


- NC's future is **increasingly urban** in nature
- Growth increasingly concentrated in its metropolitan core, particularly Raleigh & Charlotte metro areas
- Migration out of small towns likely to accelerate
- Culture & politics will **shift away from rural roots**
- **Challenge**: stimulating economic growth outside state's metropolitan and resort areas
- **Challenge**: addressing the manufacturing-to-knowledge based worker skill gap



# Socio-Cultural Trends

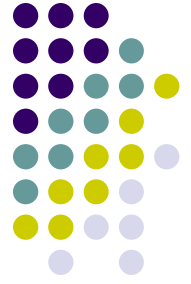
- **Doubling of world's population**
  - Greatest fertility where least able to support
  - **Global agriculture**: supply as much food as has been produced during all of human history in **next 40 years**
  - **Rapid migration** from Southern Hemisphere to North
  - **Culture clashes** between natives & immigrants are likely to **destabilize** societies throughout the developed world



# Socio-Cultural Trends

- Population of developed world living longer
  - Each generation lives longer & remains healthier than last
  - Global demand for products & services aimed at the elderly can only grow quickly
  - Possible instability: competition for resources between retirement-age boomers and working-age children & grandchildren
  - Cost of health care destined to skyrocket
  - May be offset by dramatic advances in geriatric medicine

# Socio-Cultural Trends



- **Elderly population growing dramatically everywhere**
  - **Developed countries** fastest growth in the 65+ segment: 1950: 8%, 2000: 15%, 2050: 27%
  - **Ratio of working-age people to retirees** will drop dramatically
  - **Burden on national economies difficult to sustain** under current medical & social security systems
  - U.S. will need **more doctors specializing in diseases of the elderly**; at least double the 9,000 now available
  - **U. S. Nursing shortage**: US will be short 515,000 nurses by 2020 just as senior baby boomers flood health-care system
  - State health-care agencies will be forced to take the lead in recruiting new workers to this critical field

# Socio-Cultural Trends



- Growth of information industries is creating a knowledge-dependent global society
  - Information is the primary commodity of more industries
  - Internet makes it possible for small businesses to compete on equal footing with industry leaders
  - Average PC station will soon combine computer, fax, picture phone, copier & include real-time voice translation for up to 8 common languages
  - Knowledge workers better paid than less-skilled workers
  - Even entry-level workers & those in formerly unskilled positions require a growing level of education
  - Higher levels of education required for a productive role in today's workforce

# Socio-Cultural Trends

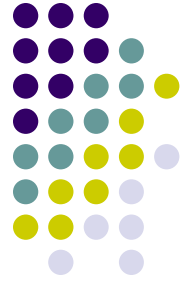


- **Growing acceptance of cultural diversity**
  - Information technologies promote **long-distance communication**
  - Within U.S. & Europe, regional differences, attitudes, incomes, & lifestyles blurring as **business carries people from one area to another**
  - **Intermarriage** continues to mix cultures
  - Powerful **reactions against changes** may produce backlash
  - **Burden to accommodate** foreign-born residents will continue to fall on **employers**, expected to make room for languages & cultures



# Socio-Cultural Trends

- **Societal values are changing rapidly**
  - Developed societies increasingly take cue from **Gens X and Y** vs. baby boomers who have dominated western thinking for most of 40 yrs
  - Both **self-reliance** & **cooperation** will be valued: no longer able to fall back on SS, pensions, etc. & group action best way to optimize scarce resources, such as retirement savings
  - **Post 9/11 effect**: Americans prefer greater sense of **safety at cost of greater gov't surveillance & intervention** in our lives



# Socio-Cultural Trends

- **Societal values are changing rapidly**
  - Narrow, extremist views of either Left or Right will slowly lose their popularity
  - **Moderate Republicans & Conservative Democrats** will lead their respective parties
  - Demand for **greater accountability & transparency** in the US business community
  - Wave of **stockholder protection laws & regulations** expected



# Socio-Cultural Trends

- Young people place increasing importance on economic success, which they have come to expect
  - Generations X & Y known only good economic times, recent downturn considered an aberration
  - High expectations, but many lack means to achieve them
  - Only 1 in 3 HS grads goes on to receive college degree
  - Real income of HS grads declined steadily for 50 yrs
  - Many want but cannot afford high cost
  - Without higher ed, expectations will never be met

# Socio-Cultural Trends



- Tourism, vacationing, & travel continue to grow into the next decade
  - People have more disposable income, especially in 2-earner families
  - Tourism will benefit as Internet “virtual” tours replace printed brochures & web sites provide detailed information
  - Multiple, shorter vacations throughout yr replace traditional 2-week vacation
  - More retirees will travel off-season, spreading travel evenly throughout the year
  - Hospitality industry will grow at least 5% per yr for the foreseeable future



# Socio-Cultural Trends

- Physical-culture & personal-health movements remain strong, but far from universal
  - Emphasis on preventive medicine is growing
  - Smoking is in general decline in the U.S.
  - Younger generations more responsible drinkers
  - More conscious of our appearance & physical condition
  - Diet, fitness, stress control, & wellness programs will prosper
  - Like tobacco companies, producers of snack foods, liquor, & other medically dubious products will target markets in developing countries



# Socio-Cultural Trends

- **Consumerism is still rapidly growing**
  - A **networked society** facilitates a consumerist society
  - Shoppers have **access to information** about pricing, services, delivery time, & customer reviews
  - **Competition shifting** from primarily price to improvements in service & salesmanship
  - **Consumer advocacy groups** will continue to proliferate, promoting better information on packaging, television, and the Internet.
  - **Discount stores, factory outlets, & food clubs** will continue to grow in the U.S., a trend now spreading to Europe and Japan



# Socio-Cultural Trends

- **Family structures are becoming more diverse**
  - In periods of economic difficulty, **children & grandchildren move back in**
  - **One third** of all U.S. Gen X'ers have returned home
  - Growing numbers of **grandparents are raising their grandchildren** because drugs and AIDS have left the middle generation unable or unavailable
  - In Africa, AIDS has **orphaned 12 million**
  - The **nuclear family is rebounding** as baby boom and Gen X parents focus on their children and grandparents retain more independence and mobility



# Political Trends: National

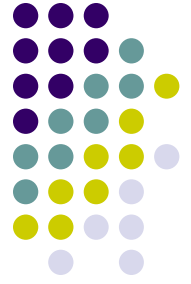
- **Ambitious second term** Bush agenda
  - tax code, social security, education, Supreme Court
- **Republican Congressional majority**, projected to remain well into the future, will help advance the agenda
- More contentious policies will meet with strong **Democratic resistance**



# Federal Legislation: Higher Ed

- In first speech as U.S. Education secretary, Margaret Spellings urged college presidents to **adopt the spirit of the No Child Left Behind** law
- Did not suggest that higher ed equivalent in the offing
- **Points**
  - Federal government provides 1/3 of higher education revenues - compared to 1/10 for K-12 system
  - [2.6% of NCCCS budget in 2004-05]
  - Taxpayers entitled to same kind of accountability NCLB has provided for primary education funding
- As costs increase, public institutions can expect **increased scrutiny** from legislatures & Congress

# Federal Legislation: Higher Education

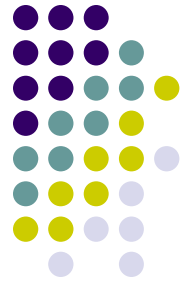


- **Reauthorization of the Higher Education Act (HEA)**
  - Student Financial Aid
  - Services to help students complete HS & enter and succeed in post-secondary education
  - aid to institutions
  - aid to improve k-12 teacher training at postsecondary institutions
- **Single definition** of institution of higher education
- Give for-profit colleges access to federal grants



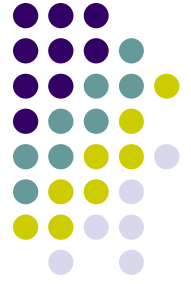
# State Legislatures

- State budget outlooks appear to be improving
- An analysis of governor's State of the State addresses since 2003: *fiscal crisis* to *deficit* to *surplus*
- In July, National Association of State Budget Officers and National Governors Association reported:
  - **Revenues** were 2.1% **higher** than estimated
  - **Only 5 states had to make cuts** after passing 2005 budgets, compared with 18 in 2004 and 37 in 2002 and 2003



# NC Outlook

- During 1990s boom, General Assembly enacted sizeable **tax cuts** at the same time approving **substantial investments in state services**:
  - increasing teacher pay, funding Smart Start
- Business slow down, rise in unemployment, Hurricane Floyd, repayment to retiree pensions & citizens unconstitutional intangibles tax, stock market downturn, 9/11
- As state **revenues decreased**, **health care costs** exploded, **enrollment** in state education institutions **increased** substantially, **rising** numbers of **unemployed**, higher costs of state debt payments



# NC Outlook

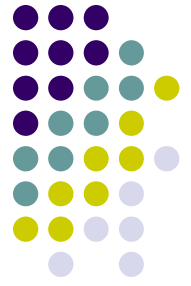
- NC ended **FY 2004-05** with a **surplus** of \$650 million
- Two thirds **non-recurring** and must be used for one-time expenditures
- Significant portion to **statutorily-required reserves**
  - Rainy Day Funds, Clean Water Trust, Renovation and Repair Fund
- Bulk of the surplus
  - Result of **tax/court settlements**, which do not reflect a burgeoning economy

# NC Outlook



- **Structural budget challenges** on revenue side anticipated for next several years
  - Decline of **traditional manufacturing, energy costs** taking bigger bite out of available consumer spending, tax increases built into this budget are only temporary
- Continuing **pressure to eliminate corporate income tax**: third largest source of tax revenue for the state
- Concern that revenue growth cannot keep pace with expenses

# Technology Trends

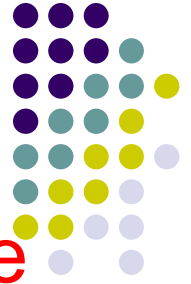


- **Technology increasingly dominates economy & society**
  - Technical obsolescence is accelerating
  - Robots taking over more & more jobs
  - **Wireless** connections simplify relocation of personnel, minimize delays in completing new installations, lets terminals travel with user instead of vice versa
  - New technologies require **higher level of education and training**
  - Increased productivity retarded job growth in 2000-early 2004

# Technology Trends

- Research & development will play a growing role in the economy
  - Total federal outlays on R&D have grown steadily: US, Japan, China, Germany
  - Federal funding for basic research has dwindled as Washington focuses on military research & engineering
  - Corporate R&D, post-9/11, shifted from pharmaceuticals & computer-related fields to **bio-** and **nanotechnology**, & **security technologies**
  - Western corporations are beginning to **outsource R&D** to foreign contractors





# Technology Trends

- **Advances in transportation technology make travel/shipping faster, cheaper, safer**
  - NASA's X-43A Scramjet successfully flew at 7,000 mph (10x speed of sound) in 2004. May change the face of inter-continental travel
  - 2010: road condition sensors, variable transmissions, automated traffic mgmt systems, night-vision systems & smart seats common
  - Hybrid gas-electric cars will begin to win market share between 2005-2010
  - Trucks on most heavily traveled highways will be exiled to car-fee lanes



# Technology Trends

- **The pace of technological change accelerates with each new generation of discoveries & applications**
  - 80% of the scientists, engineers, & doctors who ever lived are alive today -- and exchanging ideas in real time on the Internet
  - All of today's technical knowledge is only 1% of knowledge available in 2050
  - **Lifelong learning is a necessity** for anyone who works in a technical field & for growing numbers who do not.



# Technology Trends

- **Important medical advances continue almost daily**
  - Genetic research: possible cures for hemophilia, cystic fibrosis, cancers & AIDS
  - Biochemistry + advanced computer modeling: design drugs to fit specific receptors in the cell
  - Artificial blood promises to stretch the blood supply
  - “Magic bullet” drug-delivery systems direct enormous doses of meds to specific body areas, limited side effects
  - By 2025, the first nanotechnology-based medical therapies in clinical use: microscopic machines that measure internal processes, remove cholesterol plaques from artery walls & kill cancer cells before tumors form

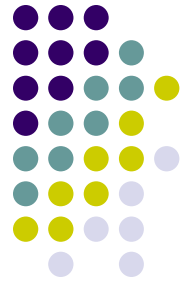


# Technology Trends

- **The Internet is growing**
  - 2004: 945 million worldwide Internet users
  - 2007: Expected to grow to 1.35 billion
  - Rapid expansion of Internet connectivity in developing countries: **India, China**
  - Most Internet communication is commercial, business to business, as opposed to personal email
  - Internet-based commerce growing rapidly
  - 2000: 42% of total Internet-using population Americans
  - 2004: less than 20%
  - **Internet-based operations require more sophisticated, knowledgeable workers**

# Top 10 Strategic Technologies for 2020

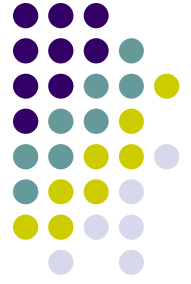
A team of scientists & engineers at Battelle, a world-renown technology organization in Columbus, Ohio, offers this list:



1. Genetic-based medical & health care
2. High-power energy packages
3. GrinTech (Green Integrated Technology)
4. Omnipresent computing
5. Nanomachines
6. Personalized public transportation
7. Designer foods & crops
8. Intelligent goods & appliances
9. Worldwide inexpensive & safe water
10. Super senses

# Top 10 IT Issues from EDUCAUSE

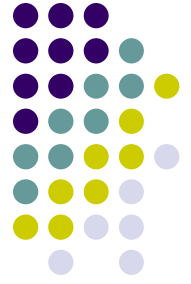
A nonprofit association whose mission is to advance higher education by promoting the intelligent use of IT.



1. Funding IT
2. Security & Identity Management
3. Administrative/ERP/Information Systems
4. Strategic Planning for IT
5. Infrastructure Management for IT
6. Faculty Development, Support, & Training
7. E-learning/Distributed Teaching & Learning
8. Governance, Organization, & Leadership for IT
9. Enterprise-level Portals
10. Web Systems & Services

# Trends in Higher Education

Society for College & University Planning



- Increased importance of **student retention**
  - Only 55% of Americans who start complete in 6 yrs
  - Only 41% of African American or Hispanic
- Rates of growth in the 18-24 & 25 and older populations vary widely across states over the next 10 yrs
  - Community colleges continue to increase their share of college-goers in all population groups
  - Capacity to absorb more students severely limited without additional funds



# Trends in Higher Education

Society for College & University Planning

- **Demand for continuing education among adults will keep growing over the next decade**
  - Adults require flexibility: different classroom & pedagogical arrangements
  - For-profit higher education a likely beneficiary of this trend
- **Increasing tuition rates making college less affordable**
  - Nat'l Ctr for Public Policy & Higher Education gave 36 states "Fs" and 11 "Ds" in affordability (NC received a D-)
  - While states anticipate increased revenue, most are replenishing rainy day funds
  - Significant cuts in federal funding expected

# Trends in Higher Education

Society for College & University Planning



- Engaging students in active & meaningful learning benefits the student, college, and community
  - Bayh-Dole technology transfer law (1980) has seen # of patents issued to universities rise from 250 to 3,600
  - In 2002, US higher education institutions earned \$1.3 B in revenues
  - B/w 1980-2002 more than 4,300 companies were formed
  - HSs increasingly requiring community service -- may see this at publicly-supported institutions
  - Service learning, internships, co-op placements could provide documented economic benefits to go with learning outcomes

# Trends in Higher Education

Society for College & University Planning



- **Legislation aimed at increasing accountability in higher ed playing well at state & federal levels**
  - Performance measurement & assessment will remain at top of senior administrators' lists of issues
  - No Child Left Behind for college may not be far away
- **Spending on IT, still over \$5 B, likely to decline again this year**
  - Private institutions report increase of 28%, public institutions expect 13% drop
  - Private institutions: \$553 tech spending per student
  - Public institutions: \$203 per student

# Trends in Higher Education

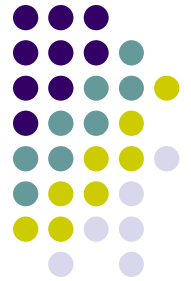
Society for College & University Planning



- **Unlike other tech spending, wireless access is on the rise**
  - 79% of colleges surveyed reported having wireless networks, up from 45% in 2002
  - Power lines + wireless access may help end the rural-urban divide
- **Students expect technical support**
  - Students show up on campuses today with more electronic devices
  - University of Minnesota now sets up computer inoculation stations in residence halls

# Trends in Higher Education

Society for College & University Planning



- Educational outsourcing -- no longer limited to manufacturing & help centers
  - High value added services like education, tax preparation, medical diagnostics & legal services are all going to **India** -- a country that will soon have more English speakers than the rest of the world combined
  - US school children are now **tutored** by Indian nationals through the Internet
  - The southern state in India that is the center of its IT industry plans to build a high-speed broadband network that provides **access to all its citizens**

# Education in the Knowledge Economy



- **Knowledge** is to the 21st century what natural resources and manufacturing were to 20th century
- **Learning** is the **currency** of Knowledge Economy
- One set of skills acquired in youth no longer is sufficient in the new economy
- Kiplinger Letter: 75% of today's workforce needs retraining just to keep pace
- Not just education but the ability to learn and learn **continuously**

# State of the South Report 2004

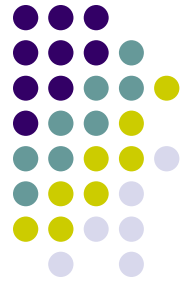
MDC Inc



- For both people and places in the South, education is a prerequisite for success
  - Jobs that pay middle class wages require a **demanding HS education** followed by further education & training
  - Occupations requiring **BA degree: 29% of new jobs** generated 2000-2010 vs. 21% of all jobs in 2000
  - Occupations requiring **community college degree** or certificate: **13% of new jobs** 2000-2010 vs. 8%
  - Occupations requiring only **work-related training**: only **58%** vs. **71%** of all 2000 jobs
  - “**Single, clear imperative**”: ensure that all young people graduate from HS prepared for further education

# State of the South Report 2004

MDC Inc



- Low educational attainment in South both cause & result of region's low-skilled economy
  - Education **not valued** in an economy based on sharecropping, mining, and cotton mills
  - States & communities **invested minimally** in public education to keep taxes down & keep workers in place
  - Universities were for the elite
  - Rural youth who did complete HS & went on to college often **moved away** because there were few jobs in the South's small towns & rural areas for college-educated

# State of the South Report 2004

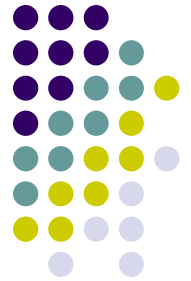
MDC Inc



- The **undereducated workforce a magnet** for assembly plants in the small towns and rural areas
- But it **prevented the region** from attracting or developing higher-skilled jobs
- Today the South is breaking the cycle of low educational attainment and low-skilled jobs, but large gaps remain: **race** and **poverty**
- And just when the South needs more people educated and educated better, the region finds itself caught in a **“vise”**

# State of the South Report 2004

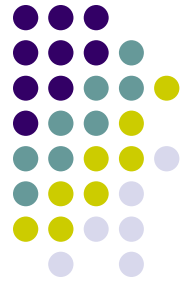
MDC Inc



- **Economy**
  - To thrive in the global economy, the South needs more workers with education and training beyond HS
- **Demography**
  - A region with historically low levels of educational attainment, **two demographic trends** challenge ability to boosting education levels.
  - **Retiring baby boomers** leave a growing share of the South's workforce that are black and Latino
  - **Background of poverty**: a large proportion of the incoming workforce will have grown up with inadequate resources at home & inadequate educational opportunity at school

# State of the South Report 2004

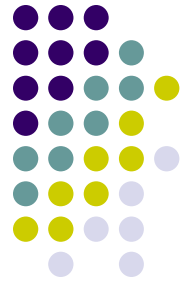
MDC Inc



- **Academic deficiency is not just a Southern problem**
- Nationwide, many students enter high school with two strikes against them
- **National Assessment of Educational Progress:** most students begin 9th grade with inadequate skills
- Nationwide in 2003, only **30%** of eighth graders scored “**proficient**” or above in **reading**
- In most Southern states, less than 30%; in 10 states more eighth graders scored “below basic” than proficient

# State of the South Report 2004

MDC Inc



- Across the country, only **1 in 8 black** students and **1 in 7 Hispanic** students scored proficient or higher
- **Math** scores are even **lower**
- Nationally, only **1 in 4 eighth graders** scored **proficient** or higher
- In the **South**, excluding NC, SC, TX, VA, math scores were **even worse** than the national average
- **More than one-third** of eighth graders scored “below basic”

# Measuring Up 2004

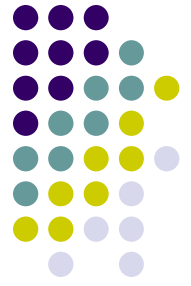
## The State Report Card on Higher Education



- National Ctr for Public Policy & Higher Education
- **National report card** on higher education
- Third is a series of biennial report cards
- States graded in six performance categories:  
**Preparation, Participation, Affordability,**  
Completion, Benefits, Learning
- NC made **gains** in Preparation over past decade;  
however, **smaller percentage of students**  
**graduate from HS** than a decade ago

# Measuring Up 2004

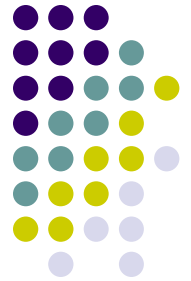
## The State Report Card on Higher Education



- NC **one of lowest performing** states in percentage of young people earning a HS credential
- Eighth graders perform poorly on national assessments in **science**
- **Low-income students** perform poorly in **math**
- **Black HS students** are only 2/3 as likely to enroll in upper-level math and science

# Measuring Up 2004

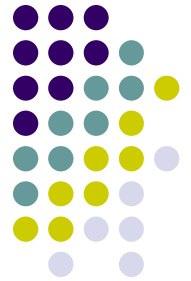
## The State Report Card on Higher Education



- **Participation**: Smaller percentage of **low-income** students enroll in higher education
- About **19% of NC adults do not have a HS diploma** or equivalent vs. 14% nationally
- Essentially makes them **ineligible to participate** in higher education
- **Affordability**: Lost much ground in providing students & families with affordable education

# Staying a Step Ahead

## Higher Education Transforming NC's Economy



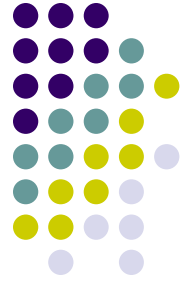
- All higher education institutions in NC need to grow in size, quality & responsiveness
- Initial analysis identifies **gaps** between projected occupational **openings** & **degrees** currently produced
- **Major shortages** in some key areas
- **BA degrees**: computer-related fields, nursing, & teacher education
- Currently **depend on in-migration** to fill available jobs

# Staying a Step Ahead

## Higher Education Transforming NC's Economy



- Over half of all nursing licenses go to out-of-state nurses
- Substantial projected gaps in occupations requiring community college education
  - registered nurses, administrative assistants
  - computer programmers, EMTs, legal secretaries, medical & clinical lab techs, aircraft mechanics, service techs, surveying & mapping techs & medical transcriptionists
- While more difficult to predict, gaps also expected in supplying workforce for emerging industries



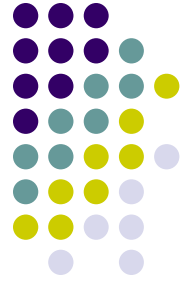
# Staying a Step Ahead

## Higher Education Transforming NC's Economy

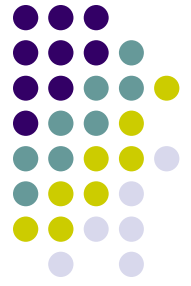
- Emerging fields - **biotechnology** & **nanotechnology** - require more students with math & science skills
- **Skills Gap 2001**, a study by the National Association of Manufacturers found persistent gaps in manufacturing workforce
  - **26%** reported workers lacking **basic math skills**
  - More than **30%** report deficiencies in **basic comprehension & writing skills**
  - **59%** indicated workers **lack work readiness skills** such as arriving on time & staying at work all day

# Staying a Step Ahead

## Higher Education Transforming NC's Economy



- Four major “cross-cutting skills” now required
- **Soft skills**
  - Cultural skills
  - Interpersonal skills
  - Intrapersonal skills
  - Technical skills
- **Computer Literacy**
- **Science & math** fundamentals
- **Entrepreneurship**: an entrepreneurial attitude, being able to creatively solve problems



# Staying a Step Ahead

## Higher Education Transforming NC's Economy

- NC employers expressed a desire for the following soft skills
  - Interpersonal
  - Oral & written communications
  - Teamwork
  - Professionalism
  - Organizing and planning
  - Problem-solving

# Staying a Step Ahead

## Higher Education Transforming NC's Economy



- **NC biotech leaders want employees who understand how their business works**
  - Presentation skills
  - Teamwork dynamics
  - Professional development
  - Social & professional norms
  - Understanding company goals
  - Understanding business operations
  - Understanding quality standards: GMP, ISO 6 Sigma
  - Understanding company expectations
  - Understanding role of regulators (FDA)



# **Brainstorming Breakout Sessions**



# Affinity Diagram process

- Team Facilitators
- TQM technique
- Creative exercise: may feel uncomfortable
- Brainstorming question
- Without talking, write ideas on index cards
- One idea to a card
- Share ideas
- Silently, group ideas into like piles
- Name each idea pile through group discussion
- Team Reports



# Brainstorming Question

- Based on the trend analysis presentation in combination with your experience and knowledge, which trends will have the greatest impact on NCCCS colleges in the next 5 years?

# NCCCS Environmental Scanning Forum

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Breakout Session Reports

