

## **Running Head: ECONOMIC CHALLENGES**

### **Economic Challenges and Opportunities: New Paradigms for Developing The 21st Century Workforce**

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## **Introduction**

We posit that as the American economy continues to struggle, African Americans and other minorities will suffer the worst part of this ugly economic decline if no definitive actions are taken. That said, opportunities abound from the policy, entrepreneurial, and community perspectives that aim to reverse the current trajectory and better the African American condition. Education, in the broadest sense of the word, is the single most important factor in determining how the African American community adapts and fairs in the changing global state. This essay will explore the current economic position of African Americans in Arizona and the role of education in determining one's societal status. This essay does not attempt to be an academic undertaking, but offers a launching pad for a more robust discussion based on baseline data and practical recommendations. Furthermore, this essay will ask challenging questions and make strong recommendations around how the future American workforce, especially the African American workforce, must think, behave, and interact in an increasingly global society to be successful. The guiding principles for this assessment and recommendations are:

1. Education is critical to long-term economic success and education must be more global, interdisciplinary, and keenly focused on reasoning ability.
2. Science, math, and technology are the cornerstones of innovation and there is a direct correlation between innovation and economic opportunity.
3. The African American community must take responsibility for the education of its population and seek a comprehensive array of public, private, and community options as there is no singular solution to the complex challenges facing the African American community.

- The current economic trajectory for the African American community is not positive and the consequences of non-action are dire.

### The Arizona Economy

As the world faces economic recession and possibly the toughest times since the Great Depression, Arizona is not immune to the global trends. Arizona’s economy lacks the depth of diversification needed to be sustainable in these tough times and has failed to develop progressive economic policies that foment its natural competitive advantages. Much of Arizona’s economic position has been built on service sector industries that have grown as a result of the positive population trends such as real estate and government. Government accounts for 15% of jobs, retail is about 11% of jobs, construction and real estate represent slightly over 10% of jobs, and healthcare is 9% of the economy.<sup>i</sup> Although these sectors are important in a diverse economy, a diverse economy should have more robust manufacturing, research and development, education, and other sectors.

Arizona’s declining job growth is dramatic. Ranking #2 or #3 in national job growth between 2004 and 2006, Arizona dropped to #24 in 2007 and fell to #49 in 2008.

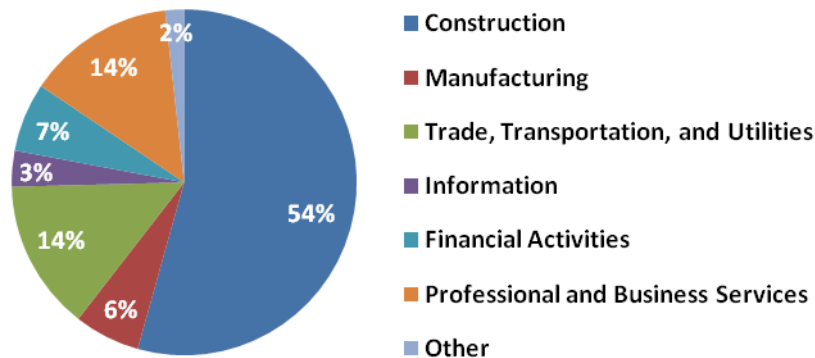


Source: U.S. Bureau of Labor Statistics

Data indicate that the lack of diversification in Arizona’s economy is a major factor in the state’s job growth decline. As the chart below shows, job losses in Arizona’s construction sector

represent more than half of the state’s total jobs lost from May 2007 to May 2008. During this timeframe, Arizona experienced a net loss of over 50,800 jobs.

**Arizona Jobs Lost by Industry  
August 2007-August 2008**



Source: U.S. Bureau of Labor Statistics

Arizona has suffered significant job loss and is currently second of the fifty states in foreclosure filings.<sup>ii</sup> The loss of jobs in Arizona in conjunction with the mortgage crunch has had a reverberating impact on spending by Arizona residents and, consequently, state revenues. The Rockefeller Institute of Government lists Arizona as number one on its list of most troubled states in terms of declining tax revenues. According to the Rockefeller Institute, personal income taxes in Arizona fell by 21%, corporate income tax dropped by 50% from January 2007 to March 2008, and sales dropped by 4.7% leading to an overall decrease in tax revenues to the state of roughly 14%.

*African Americans in Arizona*

The economic crisis facing the world and Arizona is only in the beginning stages. Financial markets have plummeted, access to capital is difficult, and many working families struggle to survive. Due to the sudden nature of the crisis, there are no data yet as to how African Americans are faring. However, if the data prior to the recession are any indicator, this recession

PERCENTAGE INCREASE IN INCOME PER ADDITIONAL EDUCATION				
	High School	Some College	Bachelors	Advanced Degree
<b>Black Males</b>	33%	19%	68%	42%
<b>White Males</b>	47%	10%	71%	35%

will be more difficult for African Americans than the population at large. Blacks in Arizona have the second highest unemployment figure of around nine percent whereas whites tend to have unemployment levels of three to four percent.<sup>iii</sup> Concomitantly, the income of Maricopa County’s black population is well below the average for the overall population. Black households bring in roughly 30 percent less in annual income than the rest of the population.<sup>iv</sup> Blacks continue to lag behind all other groups in homeownership nationally. The fall of the housing market will have a large effect on African Americans, who were some of the primary beneficiaries of sub-prime lending practices. The full extent of the impact has yet to be assessed.

*Relevancy of education in faring well in difficult economic times*

An economy reflects the summation of all its individual parts with education at the foundation. Downturns in the economic activity have always relied on ingenuity and innovation to break the grip of recessions, thus creating boom and bust cycles. Given the state of the economy and the global competition abroad, new waves of change and ingenuity will rely heavily on math and science. At the core of creativity comes teaching youth how to think; given increasing and inevitable global competition, these modes of thinking must heavily include relevant teachings in math and science for the new generation.

<b>Black Females</b>	48%	21%	85%	33%
<b>White Females</b>	51%	14%	65%	38%

*Table 1.1 Source: U.S. Census Bureau*

When comparing the relative increase in income an individual can expect from each additional degree, it is clearly evident that additional educational attainment increases income levels for both races and genders. Achieving a bachelor’s degree has the greatest positive increase on income. As African Americans have a below-average graduation rate for bachelor’s degrees, this will have long-term negative economic effects on the African American community.

When comparing income across racial lines, the table suggests that for attaining a college degree, Black females exceed White females in terms of income increase. However, for advanced degrees, White females continue to outpace their Black correlates. Interestingly, the reverse holds true for Black and White males--that is, a White male may earn more income with a college degree, but his Black counterpart will outpace him with an advanced degree. When controlling for educational attainment, black males have not mitigated the income gap with white males since 1980. The black/white income ratio has stayed relatively constant around 80%, meaning black males still only earn around \$0.80 per every dollar a white male with a similar degree completion earns.

Speculation continues as to why black males are not closing the income gap with white males when controlling for educational attainment. Regardless of the reason, it is clear that we need to prepare our youth for the next-generation economy—one that is and will be heavily based in math and science. The college and university data show that African Americans are significantly underrepresented in these subject areas which tend to offer higher paying jobs post-

graduation. This underrepresentation may contribute to some of the disparity between black and white income levels even when accounting for education.

### **Futuristic Industries and Economic Opportunity**

This year's economic crisis has hastened the need and likeliness for drastic policy implementation that could change the industrial landscape of Arizona. Despite current economic setbacks, the path for certain industries still remain promising and there will continue to be marked opportunities for individuals, communities, companies, and countries that position themselves appropriately. Certain opportunities exist in the United States and Arizona that make this state particularly promising for individuals who are willing to obtain the requisite education, champion reform, and make strategic investments in futuristic industries. Futuristic industries are technology-based industries which potentially have the ability to transform society forever. Examples of a few past industries which have transformed society forever are the automobile industry, computers, and the internet. Arizona has the potential to be a major player in some futuristic industries if the right decisions around education and investment are made in the near term by the legislative leadership and private sector. African Americans need to be at the fore of positioning themselves to compete in these futuristic industries. By addressing the needs of private enterprise and the public good, Arizona can position itself to become a major player in 21<sup>st</sup> century industries.

### *Sustainability*

Increasingly tough economic times have highlighted the importance of sustainability. Although the term "sustainability" is mostly associated with environmentalism, the importance of this industry, for the purposes of this paper, lies in the economic and entrepreneurial impacts.

Arizona is in somewhat of a unique dilemma. With the population continually rising, utility rates have and will continue to increase, disproportionately affecting low-income families, which may already struggle to meet monthly bills. The state can stabilize rates by either producing more energy or reducing the population's energy consumption. It is costly, difficult and time-consuming to develop infrastructure to produce more energy; the more cost-effective alternative may be to "green renovate" existing structures.

This type of sustainable redevelopment establishes a community asset and provides an economic boost by lowering energy generation costs and freeing up income for other spending. For instance, a green redevelopment of a 200 unit apartment can significantly reduce or eliminate month-to-month utility bills for the tenants. If the utility bills ran, on average, \$100 (a conservative estimate), the green building now has the potential of generating up to \$240,000 a year that can be spent in the local economy. The Green Survival Initiative ([www.sw-green.com](http://www.sw-green.com)) provides assistance for low-income households to reduce energy consumption. In addition, Greenovation, LLC ([www.azgreenovation.com](http://www.azgreenovation.com)) is a locally-based sustainable design/build firm working to green renovate existing structures for the benefit of the community.

Renewable energies, a subset in the field of sustainability, can positively affect Arizona's economy. With more solar days per year than anywhere else in the U.S. (and most parts of the world), Arizona is in a unique position to become the leading state for solar energy supply. According to the Greater Phoenix Economic Council, \$8.4 billion worth of solar projects which will create nearly 8,000 jobs are currently considering the state of Arizona.

*E-learning*<sup>v</sup> Another emerging industry that is quickly changing society is e-learning. From prekindergarten through postgraduate education, e-learning has become an important tool in providing greater access to education by educating more people with fewer resources. Research

by the Institute for Defense Analysis suggests that e-learning could represent a revolution in learning because it allows for a unique experience by allowing for lessons to be customized based on a student's individual behavior and learning patterns. In other words, technology can provide a pedagogical approach which is adaptive and interactive, can change intensity and pace of instruction to meet the needs of an individual student, is less expensive than tradition education, and can mimic the practices of the most effective teachers through intelligent tutoring systems. <sup>vi</sup> The implications of these realities have the potential to change the entire concept of education not only in terms of how we teach, but also what we desire to teach and aspirations around what can be taught and to whom. The current e-learning trend indicates that all education in the future may incorporate some electronic aspects.

Arizona has a burgeoning e-learning industry as evidenced by the Apollo Group being headquartered in Phoenix. The Apollo Group ([www.apollogrp.edu](http://www.apollogrp.edu)) has over \$2 billion in annual revenues, several thousand employees in the Greater Phoenix region and more than 150,000 online students. There is also Cocinella Development headquartered in Tucson which has developed a virtual world online that allows one to develop simulated characters that can practice their foreign language skills in a simulated town ([www.3dlanguage.net/index.html](http://www.3dlanguage.net/index.html)). Lastly, there is Flypaper, an individual multimedia authoring system that allows users to develop and share stories on the web and track viewer statistics ([www.flypaper.com](http://www.flypaper.com)). Other significant e-learning companies, providers, and resources in Arizona include Pearson Digital Learning ([www.pearsondigital.com](http://www.pearsondigital.com)), The Greater Arizona E-Learning Association ([www.gazel.org](http://www.gazel.org)), and Rio Salado College Online ([www.riosalado.edu](http://www.riosalado.edu)). *Life Science*

Commitment to excellence in the biosciences prompted public and private parties in Arizona to invest hundreds of millions of dollars in building new research facilities, recruiting

top notch scientists, increasing the commercialization of technology out of universities, and providing the necessary tools to start up bioscience companies and make them successful over the past six years. This has led to a 19% increase in research funding from the National Institutes of Health, a 16.7% growth in new firms, and an 18.5 percent growth in new jobs.<sup>vii</sup>

One of the keys to Arizona's success in bioscience is the high level of collaboration between numerous universities and institutes, nonprofit organizations, and the private sector. These collaborations have allowed Arizona-based companies to be more competitive by building on the strengths of their partners in soliciting research grants and expediting performance in research to develop new products. For example, Agilent Technologies which developed an atomic force microscope and scanning probe microscopes to see, move and manipulate at a nano-scale was an ASU spinout. The Translational Genomics Research Institute (TGen) and research colleagues at the University of Zurich in Switzerland, Banner Alzheimer's Institute and Mayo Clinic Arizona discovered a gene called Kibra, which plays a significant role in memory performance.<sup>viii</sup> Given Arizona's ardent commitment to life sciences and fervent aspirations to develop a strong cluster in this area, there should be increased career and entrepreneurial opportunities in this area in the future.

The sustainability, e-learning and life science domains are just a few examples of futuristic industries in which Arizona has the potential to lead. These industries all share some common traits:

- *The technologies are emerging and the need for improvement is ongoing.* In other words, innovation in these industries is rewarded and needed because the technology is not yet perfected.

- *The demand for these services (energy, healthcare, and learning tools) is not dependent on economic cycles – the demand remains constant.*
- *These industries are international in scope, demand, and performance.* Whether it is the \$200 million investment by the Government of Luxembourg in Arizona's TGen and its partners to establish a European bioscience center of excellence<sup>ix</sup> or the billions of dollars of solar projects from companies in Europe and Asia considering Arizona,<sup>x</sup> it is clear that an external approach is needed which recognizes that great ideas and technology are not exclusive to the US.
- *These industries are early phase and require government support to encourage long-term research and development as the gap between product performance and ability to quickly commercialize the technology make the investment horizon difficult for many companies sans public support.* The German government made a large investment in solar over two decades ago and are now world leaders in this industry.
- *As new industries, incredible opportunities exist for small companies that do not necessarily exist in more established industries.*  
*These technologies have the potential to change the fabric of everyday life.* These four industries are not the only futuristic industries, but are prime examples of opportunities that exist for those who are willing to educate themselves, make strategic investments, and/or launch new enterprises.

## **Conclusion and Recommendations**

It is clear that the economic problems facing Arizona, and particularly the black community, are significant. Education represents the quickest way to reverse the economic trends and establish the foundation necessary to earn, create, and retain wealth. However, the

traditional models of education are inadequate for the demands of a 21<sup>st</sup> century workforce in which the skills required to perform optimally change constantly. This new workforce must be able to learn continuously, analyze quickly, and solve problems in an interdisciplinary fashion. The current trajectory of the US economy does not have to mean the end of the American dream of economic opportunity. Instead, it should be viewed as a distinct opportunity to redefine what it means to be an American and, particularly, a black American. Economic integration, technological disruption and convergence, and the fear of the decline of the American superpower provides a unique space in which to craft policy, engage the private sector, and build community. The recommendations below are the building blocks upon which this new economic and educational paradigm should be built.

#### *Economic Policy Recommendations*

- 1. The legislative and executive leadership of the state must make pointed decisions to diversify the industry mix, incentivize futuristic industries and build comprehensive strategies to make the state a player in these areas.** Companies invest in markets that offer a strong workforce, a deep industry cluster, appropriate real estate options, and supply chain solutions. *Ceteris paribus*, incentives will be the distinguishing factor in separating countries, states, and regions from merely being competitors for futuristic industries to determining winners.
- 2. The state is confronted with a tremendous fiscal shortfall, but investments in education and economic development should be raised.** Cutting funds to these critical areas that may determine the competitive position of the state over the next 20 years is a poor idea, especially given the state's mediocre to poor performance in these areas as exhibited by the State's current fiscal challenges and the 50<sup>th</sup> place ranking in education

by the Morgan Quitno reference book Education State Rankings 2006-2007. Increased investments in education and economic development could mean the difference between prolonged economic challenges and a few years of struggle.

*Community Policy and Entrepreneurial Recommendations*

- 1. African Americans must take sole responsibility for the education of its children and young adults.** Unfortunately, years of integration and policy discussions have failed to produce commensurate educational opportunities and equitable performance between blacks and whites. These traditional measures remain worthwhile points to continue to pursue; however, a model that recognizes the failures of the system and places the onus on community, parents, and community groups to bridge this gap is the most viable option for success in the near term.
- 2. African Americans must explore modernized educational models.** The traditional American educational model has gaps and has widely served African Americans ineffectively. New models must be developed around innovating in the way materials are taught in a culturally-conscious and relevant way. These models must also force students to take a more active role, become engaged in and find relevancy in their studies. This cannot solely be the teacher's responsibility. Lastly, we must be cognizant of educational innovations that can best assist the black community such as individualized instruction through e-learning which allows for greater customization and interaction.
- 3. The African American community must augment the traditional economic model with extracurricular education that is culturally sensitive, affordable, and practical.** It is especially important to focus on science and technology. Anecdotally, it appears that many Caucasians already find programs to expand the experiences and education of their

youth. Many blacks lack the financial wherewithal to provide these opportunities to their children. A couple of examples of community programs that are providing a practical approach and real life skills to black youth are Tomorrow's Aeronautical Museum ([www.tamuseum.org](http://www.tamuseum.org)) and Compugirls (<http://compugirls.asu.edu/news.html>).

- 4. African American students must be trained in foreign languages and cultures to take advantage of the opportunities provided by foreign investment in the US and globalization.** According to the Organization for International Investment, foreign firms in the US pay an average wage of \$68,317, which is about 32% higher than the average wage at US-based companies.<sup>xi</sup> Perhaps even more interestingly, a report released by the University of Wisconsin in May 2007 found that “blacks in industries having only domestic partners are 32.73% less likely to be employed in a high wage rather than a low wage job.”<sup>xii</sup>
- 5. African Americans must be cognizant of and use creative ways to incentivize students' learning.** Whether it is paying students for good grades or simply praising them for high academic achievement, incentives have to be developed to reinforce positive behavior and counter negative peer pressure.
- 6. African Americans must partake in private sector involvement in education to increase sectoral employment.** With a plummeting economy and increasing unemployment, it may seem unbelievable that some companies are scrambling to find workers with the correct skill-set. “With 60% of the 2020 workforce already working (or temporarily and suddenly unemployed), our efforts can't be limited to primary and secondary schools: we also need immediate and targeted investments in basic education for lower-skilled working adults.”<sup>xiii</sup> This effort calls for private sector involvement with

public sector investment to meet the demand for these “middle-skill” jobs which require training beyond a high school diploma.

- 7. Engage the entire community in educating one another to deepen the sense of community and optimize the learning experience.** A comprehensive educational solution should allow for intergenerational interaction and learning. The entire community must be vested in bettering education in order to reap true results.
- 8. African Americans must seek a myriad of internal and external funding sources to bolster its innovative ideas.** Private foundations, the government, and private companies have philanthropic and social dollars to encourage economic development and advance education. It is critical that these sources of funds be pursued diligently. Additionally, the black community must pool its financial resources to invest in its own communities to create new ideas, wealth, and financial understanding.
- 9. African Americans need to “asset map” the community.** Simply put, what gets measured gets done. Up-to-date indicators of African American performance in Arizona are sorely lacking on all levels. Indicators in the fields of education, health and economics are important for community-based organizations to comprehensively address relevant problems and uncover innovative ways to mitigate them.

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<sup>i</sup> Arizona Department of Commerce, [www.azcommerce.com](http://www.azcommerce.com), Based on October 2008 figures

<sup>ii</sup> Kaiser State Health Facts, <http://www.statehealthfacts.org/comparetable.jsp?ind=649&cat=1>, November 30, 2008

<sup>iii</sup> 2000 Census Special EEO Tabulation, [www.census.gov](http://www.census.gov)

<sup>iv</sup> 2000 Census Special EEO Tabulation, [www.census.gov](http://www.census.gov)

<sup>v</sup> Information for this section provided by GAZEL, [www.gazel.org](http://www.gazel.org), [www.azelearning.org](http://www.azelearning.org)

<sup>vi</sup> The Institute for Defense Analysis, IDA Document D-2562, "Technology, The Columbus Effect, and the Third Revolution in Learning", Fletcher, J.D., March 2001

<sup>vii</sup> The Flinn Foundation 2007 Annual Report, [http://www.flinn.org/html/ar2007/report/defining\\_our\\_niche.html](http://www.flinn.org/html/ar2007/report/defining_our_niche.html)

<sup>viii</sup> Greater Phoenix Economic Council, Medical Device Overview, [http://www.gpec.org/greater\\_phoenix\\_bioscience.asp](http://www.gpec.org/greater_phoenix_bioscience.asp)

<sup>ix</sup> The Flinn Foundation 2007 Annual Report, [http://www.flinn.org/html/ar2007/report/defining\\_our\\_niche.html](http://www.flinn.org/html/ar2007/report/defining_our_niche.html)

<sup>x</sup> Solar data provided by the Greater Phoenix Economic Council

<sup>xi</sup> Organization for International Investment, <http://www.ofii.org/insourcing-stats.htm>

<sup>xii</sup> American Economic Association, Papers and Proceedings, Volume 97 No. 2, "Inward FDI and Racial Employment Patterns in US Manufacturing", Gelan A, Fealing K, and Peoples J, May 2007, <http://www.ofii.org/insourcing-stats.htm>

<sup>xiii</sup> Maguire, Shiela, "Commentary: Jobs going begging in some fields." CNN. 3 Dec. 2008.

<<http://www.cnn.com/2008/POLITICS/12/02/maguire.job.training/index.html?iref=mpstoryview>>.