

*Our*  
**COMMON**  
**JOURNEY**



**OUR COMMON JOURNEY:  
LINKING THE EDUCATION OF WOMEN AND  
GIRLS AND ARKANSAS'S ECONOMIC TRANSITION**



Women's Foundation  
OF ARKANSAS

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**IN THE UNITED  
STATES, MOTHERS'  
EDUCATION LEVEL  
HAS BEEN LINKED TO  
CHILDREN'S HEALTH  
OUTCOMES.**

# FOREWORD

Since its founding in 1998, the Women’s Foundation of Arkansas has held fast to the belief that when women are educated and economically secure, their children are better educated, better nourished, and in better health; moreover, these benefits reverberate beyond their families to include entire communities.

The Foundation is not alone in this thought. In 1830 Ireland, Catherine McAuley, Foundress of the Sisters of Mercy, said, “No work of charity can be more productive of good to society than the careful instruction of women.” Then-Secretary General of the U.N. Kofi Annan stated in 2005, “Education holds the key to unlocking most of the obstacles facing girls and women... study after study has taught us that there is no tool for development more effective than the empowerment of women.” And most recently, Hillary Clinton, while announcing the Bill, Hillary &

Chelsea Clinton Foundation’s global female education plan, said, “We know when girls have equal access to quality education in both primary and secondary schools, cycles of poverty are broken, economies grow, glass ceilings crack and potential is unleashed.”

This report brings together quantitative and qualitative data to affirm these very statements. While this report and the two others WFA is releasing with it—“Voices of Women: Perceptions of the Status of Women in Arkansas” and “Delivering Better Education: Impact of Teen Pregnancy and Birth on Education in Arkansas”—support the importance of educating women and address many of the impacts on women’s education process, they do not present us with all the answers. The Foundation will continue to delve into the needs of our state’s women in an effort to increase their economic and education status.



Lynnette Watts  
Executive Director  
Women’s Foundation of Arkansas





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# INTRODUCTION

Worldwide, heightened education levels for mothers have been shown to improve countless aspects of their children's lives and the communities in which they live.<sup>1</sup> In the United States, mothers' education level has been linked to children's health outcomes and also to children's economic well-being and educational success. For example, in 2012, only 4% of children of mothers with bachelor's degrees were living in poverty, in comparison to 53% of children of high school dropouts and 31% for those whose mothers completed high school but nothing more. In addition, children's own high school completion years later was related to their mothers' education level. Forty percent of children whose mothers did not complete high school did not graduate high school on time (that is, by age 19) in comparison to only 2% of children whose mothers had bachelor's degrees.<sup>2</sup>

While similar correlations between women's educational levels, their own economic outcomes, and the educational and economic futures of their children have shown themselves in Arkansas, an important puzzle does emerge in the relationship between educational achievement and economic outcomes in Arkansas. In many respects, particularly at the earliest levels of education, girls in Arkansas significantly outpace boys in educational achievement. Indeed, in some areas the achievement gap favoring

girls is among the largest in the nation. Yet, as time passes in their educational lives, that gap between boys and girls begins to shrink and, more importantly, in some areas of their educational lives begins to grow in a different direction. Moreover, even though their rates of gaining degrees ends up similar to men, women continue to lag behind men dramatically in earnings, suggesting that the relationship between educational achievement and economic gains noted in the international and national data above is anything but consistent. It is this puzzle that is at the heart of this research brief.

A focus on the educational and economic lives of women and girls is justified because improvements in their lives have the potential for exponential returns to the state of Arkansas in the form of children's educational and economic success as adults. Thirty-eight percent of Arkansan children lived in single parent households in 2012<sup>3</sup> with approximately 80% of these households headed by women.<sup>4</sup> These demographic realities, coupled with the alarmingly low education levels of Arkansas residents, mean a focus on women's education is a crucial strategy in improving the lives of all Arkansans. When women advance economically, Arkansas is improved as a state. The report that follows incorporates a good deal of the data one would expect in an analysis of



educational and economic patterns among Arkansas girls and women. Such statistical analysis is strengthened, we believe, by incorporating the voices of real Arkansas women whose comments reinforce the trends found in the data. Our ability to include such quotes from women across the state is because of a set of interviews collected by the students and faculty of the Interdisciplinary PhD in Leadership Studies Program at the University of Central Arkansas. While this report focuses on trends among all Arkansas females, it is crucial to recognize

that there are significant differences by race and ethnicity in women's educational experiences and attainment and the ways they link to economic outcomes.<sup>5</sup> While we do not have the space to do an in depth treatment of these issues here, we encourage readers to keep race differences in mind as we talk about Arkansas women in general. We are pleased to note that an upcoming Women's Foundation of Arkansas research report will center on the status of women of color in Arkansas.<sup>6</sup>

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As a partner with the Clinton Foundation through the Clinton Health Matters Initiative (CHMI) for Central Arkansas, the Women's Foundation of Arkansas is pleased to offer this report as a means of working across sectors to develop and implement coordinated, systemic approaches to creating healthier communities. Understanding and addressing the economic, education, and health needs of Arkansas Women can only lead to stronger, healthier communities. If you would like to read the interviews of the women conducted for this report, please contact the Women's Foundation of Arkansas by email at [admin@womensfoundationarkansas.org](mailto:admin@womensfoundationarkansas.org) or call **501-244-9740**.





# THE PUZZLE:

## HIGH EDUCATIONAL ATTAINMENT FOR ARKANSAS'S WOMEN AND GIRLS, BUT LOW ECONOMIC OUTCOMES FOR FEMALES IN THE STATE.

Although both young women and men in Arkansas graduate from high school at a lower rate than young women and men nationally, data from 2010-11 (Table 1) show that in Arkansas, young women graduate from high school at a higher rate than young men.<sup>7,8</sup> Conversely, young women in Arkansas drop out at a lower rate than young men, but the drop-out rate for both is at or higher than their counterparts nationally.

Using 2007-2011 five-year estimates from the American Community Survey, the Institute for Economic Advancement at the University of Arkansas at Little Rock showed that during this period, men and women in Arkansas were very close to parity in the highest level of education completed by both genders.<sup>9</sup> (Table 2)

While education is the key gateway to economic sufficiency, it has not resulted in a decrease in the gender pay gap in Arkansas. The data in Table 3 show that median wages are positively correlated with the level of education for men and women. This data also shows that at every degree level women earn significantly less than men in Arkansas, although it should be noted that women do slightly better as compared to men at the highest educational levels. There is some variance across the state of Arkansas. The gap is particularly pronounced in the Fourth Congressional District (south and west Arkansas) and smaller in the more urban Second Congressional District (central Arkansas).<sup>10</sup>

Arkansas is not unique in the fact that the gender pay gap persists in spite of gender parity—indeed women outperforming men—in key aspects of educational attainment. In its yearly publication on the gender wage gap, the American Association of University Women notes the gap at every level of education and notes that the gender wage gap in Arkansas is about the same as that found elsewhere in America. Some of the education-level gender pay gap can be attributed to the fact that these figures do not take work hours into account, nor do they account for occupational sex-segregation showing itself in certain professions.

The Institute for Women's Policy Research (IWPR) looks at women's economic status in a slightly more sophisticated manner, developing an index that incorporates full-time earning for the median woman worker in the state, the wage gap between women and men, the percentage of women in the labor force, and the percent of women who are employed in managerial and professional positions.<sup>11</sup> Here the comparative failure of Arkansas women to thrive economically becomes clearer. The IWPR's analysis of the 2012 American Community Survey ranks Arkansas 48th of the 50 states plus the District of Columbia. While the average index score across the states and D.C. was 4.0 (out of a possible 5), Arkansas's score was only a 3.60. Highlighting the importance of bringing additional factors into the mix in a full-fledged analysis, it is on the wage gap where Arkansas

performs relatively well ranking 36th across the nation. This research brief seeks to unravel the puzzle of why the economic outcomes gender gap persists in Arkansas even though women often outpace men in the state on key educational indicators that have traditionally been emphasized. As we will see, there is no single explanation for this reality of life in Arkansas, but a variety of challenges related to women’s completion of advanced degree

programs (bachelor’s degrees and above) as well as their success in science, technology, engineering, and mathematics (STEM) fields are at the center of these obstacles. Therefore, while no single factor will solve this challenge, a more hopeful view is that many different changes will make some difference in bettering the economic outcomes for women and, by extension, for the state as a whole.

**TABLE ONE:  
HIGH SCHOOL ANNUAL DROPOUT AND  
FOUR YEAR GRADUATION BY GENDER**

		Male	Female
Dropout Rate (2009-10)	Arkansas	4.2%	2.9%
	US	3.8%	2.9%
High School Graduation Rate (2010-11)	Arkansas	74%	80%
	US	77%	84%



**TABLE TWO:**  
**PERCENT OF ARKANSAS MEN AND WOMEN 26 YEARS  
 AND OLDER BY HIGHEST COMPLETED LEVEL OF EDUCATION**

	HS	Some Col.	AA	Bachelor's	Graduate/Prof.
Men	36.1	21.2	4.7	13.1	6.1
Women	34.4	22.6	7.1	13	6.4

**TABLE THREE:**  
**MEDIAN EARNINGS IN PAST 12 MONTHS FOR  
 ARKANSAS MEN AND WOMEN 25 YEARS AND OVER**

	<HS	HS	Some College	BA	Graduate or Prof Degree
Men	\$22,386	\$30,498	\$36,143	\$52,751	\$70,496
Women	\$15,252	\$19,813	\$24,092	\$36,980	\$49,550
Pay Ratio	.68	.65	.67	.70	.70



# UNRAVELING THE PUZZLE:

## THE SPECIAL CHALLENGES OF WOMEN IN HIGHER EDUCATION

Unquestionably, Arkansas's girls and young women perform ably in many aspects of educational attainment that have traditionally been emphasized in American education. As noted above, high school completion is one area where young women outpace young men.

Yet, it is crucial to note that the gap in educational attainment—significant when it comes to high school completion and through the associate degree level—fades away as we move into completion of bachelor's degrees and post-graduate education. Moreover, because the wage gap shows itself across the ranks of education, it is important for women to overachieve educationally to begin to close the overall earnings gap with men. Thus, college graduation—a persistent challenge in a state which has consistently ranked near the bottom nationally<sup>12</sup>—is a particular crisis for Arkansas's female population. Overcoming special challenges facing women as they seek to complete these degree programs must be a component of any strategy for improving economic outcomes for women and the families of which they are a part.

One distinct challenge facing many Arkansas women as a barrier to higher education completion and success is a set of issues related to childcare. IWPR has engaged in a programmatic approach to identifying the childcare barriers to post-secondary education for women with children,

as well as identifying best practices toward encouraging degree completion among this population.<sup>13</sup> Research by the institute shows that among the population of students most at risk of dropping out—those that are low income and first generation—one-third are parents. Student parents are more likely to leave college with no degree after six years than students who are not parents; 53% of this group drops out as opposed to 31% of other students.<sup>14</sup> As one west central Arkansas woman said,

***“If somebody can’t watch them, then you’ve got to pay extra daycare, and that’s my biggest problem. When you try to balance life and school and you try to give both 100%, you just kind of crash and burn for awhile. Usually it’s over childcare. I wish they would do more with childcare.”***

Childcare and other related economic challenges are especially pronounced for single parents, reducing their educational options significantly. One Siloam Springs woman recounted,

***“I took a break in education because I just couldn’t work and go to school at the same time. It was just too much. I didn’t have anybody to keep the kids because I was divorced. I didn’t have anyone to watch over [the kids] so I had to stop school. I always knew I needed to get that degree.”***



A 19-year old Benton woman added:

***“I think there should definitely be more [educational] opportunities when it comes to teen pregnancy. These girls don’t want to drop out of school, and when they do it’s because they’re trying to support their babies. I think there should be more opportunities for them because they’re not wanting to just drop their education. They definitely want to better themselves for their children and themselves. If I had more educational opportunities and definitely had more money and grants and stuff to go through school, I would definitely do it because I would love to get that out of the way as soon as possible.”***

Arkansas ranks above the national average with 38% of its families being single female-headed, according to the most recent Census data.<sup>15</sup> Also according to Census data, Arkansas has the 5th highest divorce rate in the nation for women (12.8 divorces per 1000 women).<sup>16</sup> Another reason for the relatively large percentage of female-headed households is the fact that Arkansas is tied for 7th among the 50 states in the percentage of births to unmarried women.<sup>17</sup> A significant number of these births are to women still in their prime educational years; Arkansas ranked 3rd in 2010 in the percentage of births to teenage mothers in the nation with over 5,000 women under the age of 20 giving birth that year in the state.<sup>18</sup> Most important for the purposes of this project, only

1-in-50 teen mothers finishes college by the age 30.<sup>19</sup> Such statistics are brought to life through the words of real Arkansas single mothers who have emphasized just how precarious their educational lives have been. As one Stuttgart woman summed it up:

***“I was a single mother. My parents, my sister and her husband, and my grandmas were very supportive. I didn’t take out a student loan, my grandmas helped pay for college. My parents helped pay. Even my ex-husband helped pay some. I am a planner, but if one of those little links had fallen, I would have crumbled. I wouldn’t have made it. I couldn’t have made it. If my parents had gotten sick, if my child had gotten sick, if my grandmas had gotten sick, if somebody somewhere couldn’t do it, I wouldn’t have been able to finish it. It all had to be together to support me.”***

### **THE MISMEASURE OF EDUCATIONAL ATTAINMENT**

Just as Arkansas women are performing better than men in terms of high school graduation rates and the attainment of some college education, a steady achievement gap in favor of positive educational outcomes for girls shows itself throughout the school years and beyond in literacy, i.e., both reading and writing. On the National Assessment of Educational Progress (NAEP)—the “Nation’s Report Card”—female students in both 4th and 8th grades outpace their male peers in literacy.



**TABLE FOUR:  
PERFORMANCE, BY SEX, ON THE 2011-12 ARKANSAS STATE  
BENCHMARK LITERACY EXAMINATION (PERCENTAGE/ADVANCED)**

Grade	3rd	4th	5th	6th	7th	8th	11th
Female	86.8	89.9	90.5	82.3	86.6	87.4	74.9
Male	76.6	80.5	80.8	68.3	74.4	73.4	62.6

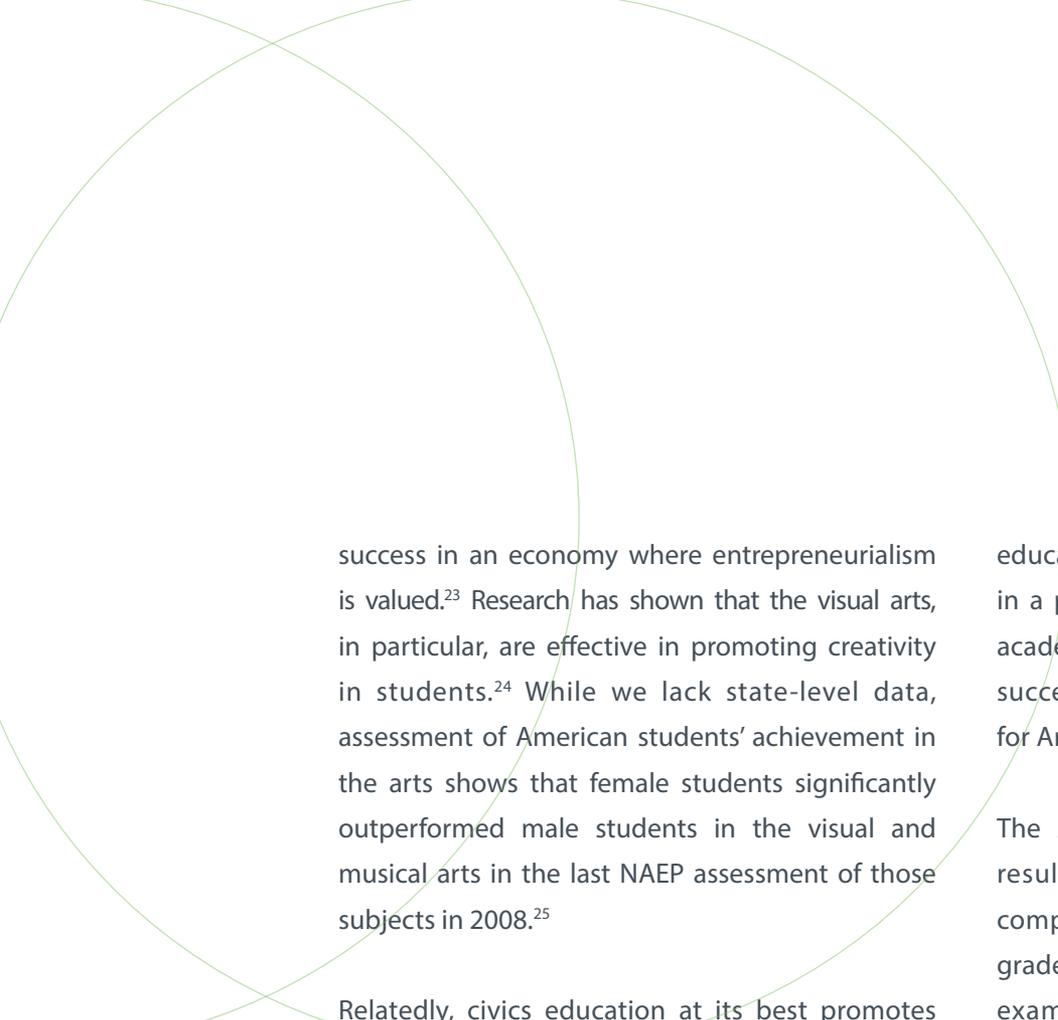
In 4th grade, the achievement gap in terms of students achieving at the proficient or advanced levels is four percentage points in favor of girls, according to the 2010-11 sample of Arkansas students. By 8th grade, this grows into a more marked 10-point gap (33% of Arkansas 8th grade girls are proficient or advanced while only 23% of males are).

Arkansas’s state exam results across the grades show perhaps even starker gaps in female students’ favor on literacy. As shown in Table 4, gaps present on reading as early as 3rd grade grow and persist across the years tested in Arkansas. Indeed, an analysis of reading scores late in the last decade showed that the achievement differences between girls and boys in Arkansas were among the largest in the nation.<sup>20</sup>

Importantly, a 21st century education includes many of the elements on which Arkansas’s female students perform ably compared to males. Literacy is at the core of academic success since reading ability becomes more central to learning in other subjects. Studies have consistently shown the linkage between reading proficiency by the end of 3rd grade and success from that point on across the educational spectrum.<sup>21</sup> Many argue that reading skills are even more essential in a technological environment in that job success can no longer come from simply watching others perform mechanized tasks but instead require close reading of specialized technical manuals.<sup>22</sup>

Moreover, the creativity that is at the heart of artistic achievement is vital to the innovation (described as “fresh thinking that creates value”) crucial for





success in an economy where entrepreneurialism is valued.<sup>23</sup> Research has shown that the visual arts, in particular, are effective in promoting creativity in students.<sup>24</sup> While we lack state-level data, assessment of American students' achievement in the arts shows that female students significantly outperformed male students in the visual and musical arts in the last NAEP assessment of those subjects in 2008.<sup>25</sup>

Relatedly, civics education at its best promotes additional skills needed for 21st century success such as the ability to use one's analytical skills to separate fact from opinion and the development of "core civic dispositions" promoting a commitment to participation in collaborative endeavors, e.g., teamwork.<sup>26</sup> Again, according to recent NAEP Civics exams, gender gaps—statistically significant at the youngest grades—show young women's propensity towards success in the civics realm as compared to young men.<sup>27</sup>

Moving away from these areas towards the so-called STEM subjects—science, technology, engineering, and math—the educational achievement gaps favoring females begin to fade away. While literacy, the arts, and civics are fundamentally important to a 21st century education (as they have been across time), it is just as clear that an aptitude for STEM fields is vitally important for economic success in the 21st century. A 21st century

education that does not include STEM subjects in a priority place is producing a mismeasure of academic achievement necessary for economic success. Here, a starkly different picture emerges for Arkansas girls and women.

The 2011-12 Arkansas Benchmark Examination results (Table 5) show similar results when comparing young men and women across the grades on the state benchmark mathematics examination with boys outperforming girls marginally by 8th grade. These results parallel the NAEP results where 37% of both boys and girls are proficient or advanced in 4th grade mathematics and 8th grade males outperform their female peers by 31%-28% proficient/advanced.

In the upper grades in mathematics, the emphasis turns to end-of-course evaluations. Young women slightly outperform young men in Algebra I (Table 6), but in geometry Arkansas young men have a small advantage.

Moving to science performance, male students move into a stronger position and a small gender gap favoring males shows itself. The same pattern is shown on the end-of-course biology examination in Arkansas where males scoring proficient or advanced on the test outpaced females 45.5% to 42.7% in the 2011-12 academic year.



**TABLE FIVE:**  
**PERFORMANCE, BY SEX, ON THE 2011-12 ARKANSAS STATE BENCHMARK MATHEMATICS EXAMINATION (PERCENTAGE PROFICIENT/ADVANCED)**

Grade	3rd	4th	5th	6th	7th	8th
Female	87.9	83.9	78.8	78.1	79.5	68.1
Male	86.1	80.2	73.7	73.0	75.2	69.1

**TABLE SIX:**  
**PERFORMANCE, BY SEX, ON THE END OF COURSE MATHEMATICS EXAMINATIONS (PERCENTAGE PROFICIENT/ADVANCED)**

Course	Algebra I	Geometry
Female	81.6	75.4
Male	76.5	75.9

**TABLE SEVEN:**  
**PERFORMANCE, BY SEX, ON THE 2011-12 ARKANSAS STATE BENCHMARK SCIENCE EXAMINATIONS (PERCENTAGE PROFICIENT/ADVANCED)**

Grade	5th	7th
Female	59.8	40.9
Male	61.6	42.4





It is as young women begin to transition to higher education that the STEM-related achievement gaps become pronounced. For example, while the healthy majority of all Advanced Placement (AP) exams taken in the state in 2013 were taken by females (24,945 female versus 18,185 male), both the numbers and performance levels change starkly when examining only AP tests in STEM-related fields. As shown in Table 8, on each of these exams, male students outperformed their female peers in Arkansas on average. Moreover, in most cases (biology and statistics are the exceptions), the total number of exams taken in STEM subjects were significantly higher for young men than young women. In several areas, particularly computer science and three areas of physics, the differences are glaring both in terms of the number of test takers and the overall performance by young men and women.

Data recently released by ACT reinforces the gender preparation gap in STEM fields for males and females as they get ready to leave high school in Arkansas. Interestingly, employing both students' expressed interest areas and their measured interest areas (based on the ACT Interest Inventory), ACT breaks STEM students down across those who express an interest in the STEM career fields, those who are measured to have an interest in STEM based on their aptitude test, and those who show both. No matter whether it is measured interest, expressed interest, or both,

male students are more likely to be prepared for college in mathematics and science than are female students in Arkansas. Among those 3,863 Arkansas students who have both an expressed and a measured STEM interest, there is a 15-point readiness gap favoring males in mathematics (58% of males prepared for college versus only 43% of females) and a 17-point readiness gap favoring males in science (54% versus 37% ready).<sup>28</sup> Across the four segments of STEM—science, computer science and mathematics, medical and health, and engineering and technology—variance in the gender gaps in these preparation scores do show themselves and women do more often show themselves to be prepared at higher rates than men in those areas where the students have solely expressed an interest in pursuing the field of study. All told, however, a gender chasm shows itself in Arkansas on the STEM front as students prepare for higher education opportunities.

In the ACT STEM data, females are most likely to show themselves as interested in the medical and health-related fields such as nursing. Unfortunately for women, such life science-related jobs tend to be lower paying fields in general and considerably lower in pay than jobs tied to the “TEM” quadrants of technology, engineering, and mathematics.<sup>29</sup> Such STEM positions that tie to traditional gender roles are often the “go-to” positions for talented women. As one north west Arkansas woman put it:



**TABLE EIGHT:**  
**ARKANSAS AP EXAM PERFORMANCE, BY SEX, 2013**

<b>AP Subject</b>	<b>Female Mean Exam Score (Number Taking Test)</b>	<b>Male Mean Exam Score (Number Taking Test)</b>
<b>Biology</b>	<b>2.17 (1478)</b>	<b>2.38 (1044)</b>
<b>Calculus AB</b>	<b>2.08 (1261)</b>	<b>2.38 (1339)</b>
<b>Calculus BC</b>	<b>3.08 (127)</b>	<b>3.12 (174)</b>
<b>Chemistry</b>	<b>1.66 (851)</b>	<b>2.02 (862)</b>
<b>Computer Science</b>	<b>2.12 (26)</b>	<b>2.57 (147)</b>
<b>Physics B</b>	<b>1.69 (231)</b>	<b>2.06 (437)</b>
<b>Physics: Electricity and Magnetism</b>	<b>2.5 (12)</b>	<b>3.25 (32)</b>
<b>Physics: Mechanics</b>	<b>2.31 (61)</b>	<b>2.86 (139)</b>
<b>Statistics</b>	<b>1.84 (1015)</b>	<b>2.09 (826)</b>



***“[A]fter we got a divorce I decided to go back to school. I already had a year in business, but I didn’t know what to do with that. I thought to myself: what in the world would a woman do in business? So, I got the nursing degree.”***

Therefore, in addition to better preparing women for STEM-related work through their educational lives before college there is considerable work to be done to mentor female college students towards STEM fields that are good matches for their skills and talents and that have greater economic power. A 2011 report by the U.S. Department of Commerce showed women in STEM jobs earn 33% more than their non-STEM counterparts while men in STEM fields earned only 25% more than men in non-STEM fields.<sup>30</sup> This means that not only do STEM jobs pay better than non-STEM jobs, but that the gender gap in wages is smaller in STEM fields than in general.

Based on the data presented above, the most important alterations in the educational lives of Arkansas’s girls and women are changes in policies and social practices that will promote their ability to complete bachelor’s degrees and programs that will elevate their skills in STEM-related fields, particularly those linked to higher income professions. Our attention turns next to a deeper analysis of distinctive barriers that the women of Arkansas face as they seek out this

21st century education that is the crucial link to economic livelihood for themselves and their families and, more importantly, strategies that may be employed to right this vicious circle.

***“Male students are more likely to be prepared for college in mathematics and science than are female students in Arkansas.”***





**ATTENTION TO  
MEETING THE NEEDS  
OF STUDENT PARENTS  
IN ARKANSAS  
WOULD LIKELY  
IMPROVE WOMEN'S  
EDUCATIONAL AND  
ECONOMIC SUCCESS.**

## FROM VICIOUS CIRCLE TO VIRTUOUS CIRCLE: TURNING THE EDUCATIONAL ATTAINMENT CHALLENGE AROUND

### HIGHER EDUCATION COMPLETION: THE ESSENTIAL INTERVENTIONS

In a state where such a small percentage of the public has a college degree, more awareness of what students' will experience in college is crucial. Some of the women interviewed as part of this project identify this preparation process as crucial to later success in higher education. One central Arkansas woman now in her late 30s said,

***“As far as girls coming out of high school, I think preparedness is the one thing that entering freshman really need. They really need to know what kind of situation they are going into. It wouldn't hurt for girls to take a field trip and sit in on a class when they are in high school.”***

Such insights are backed up by various pieces of research focused on heightening the success of first-generation college students.<sup>31</sup> Research has similarly shown the power of effective mentoring in enhancing success in higher education. Such mentoring—in which a more experienced member of a college or university community builds and sustains a relationship with a new member to the campus community for the purpose of easing their transition—can take several forms: mentoring from a person higher in the educational hierarchy or from a peer who has only slightly more experience themselves. While educational research has shown the power of such relationships in the persistence of students in

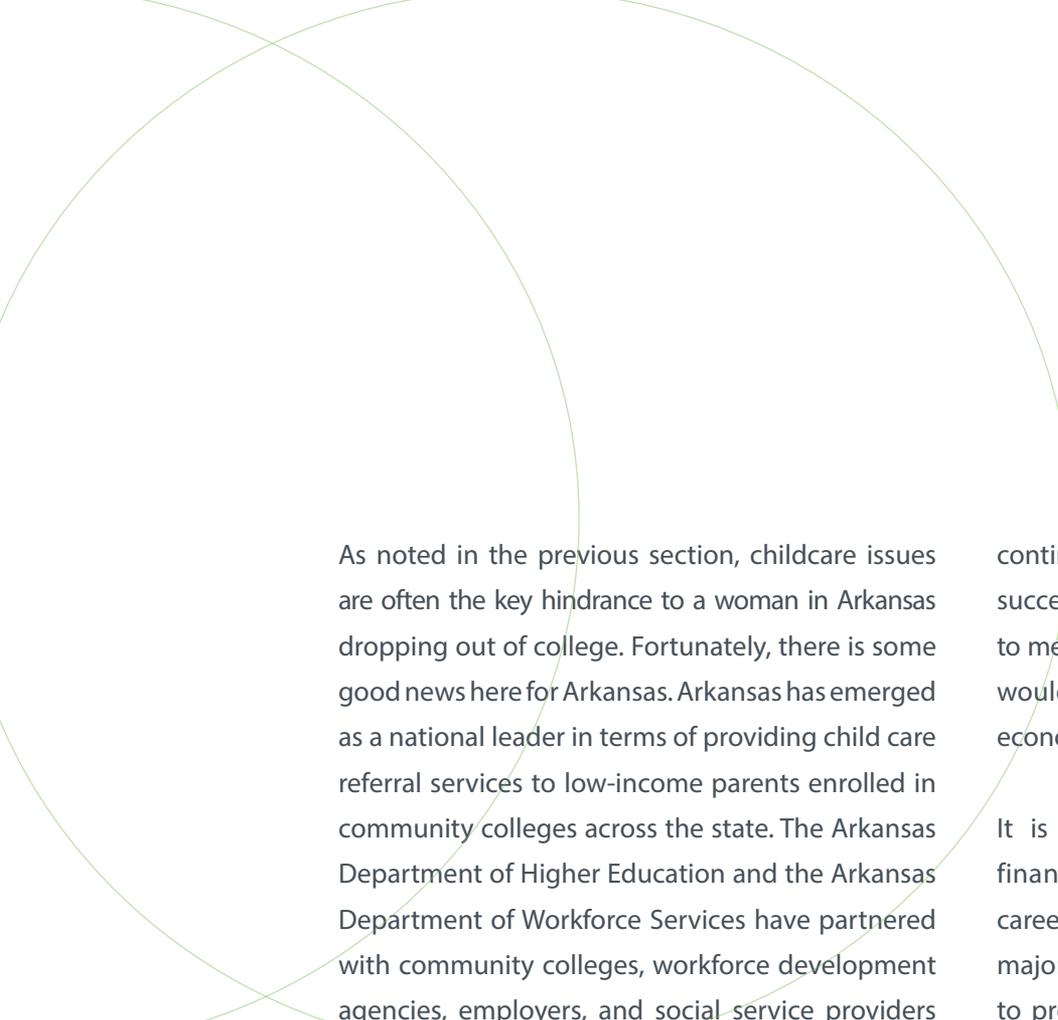
school, it has also shown that it is vitally important for clear expectations and clear boundaries to be developed with both mentors and mentees clear on those “rules of the game” related to mentoring.<sup>32</sup> As one Hot Springs woman said,

***“My counselor said to me: ‘You have incredible potential.’ It was because of her that I came back. I don't know what would have happened to me had I not returned and finished.”***

As girls of color face particular barriers in higher education, mentoring for that population of students has been shown to be particularly essential for their long-term success in higher education settings.<sup>33</sup> One African-American woman from north east Arkansas recounted:

***“Women are challenged in many ways to overcome disparities from the past, and then when you add another factor of being an ethnic minority, it becomes a double minority. It really is a challenge to overcome a lot of barriers that people who aren't in those categories don't even think about. When you deal with the hidden culture...being a first generation college student, I didn't have a lot of people to help me deal with the hidden culture, and so, I was making a lot of mistakes. Mistakes that perhaps if I had a network—someone who could have helped me navigate those systems a little better, I wouldn't have made. So I'm big on mentoring.”***





As noted in the previous section, childcare issues are often the key hindrance to a woman in Arkansas dropping out of college. Fortunately, there is some good news here for Arkansas. Arkansas has emerged as a national leader in terms of providing child care referral services to low-income parents enrolled in community colleges across the state. The Arkansas Department of Higher Education and the Arkansas Department of Workforce Services have partnered with community colleges, workforce development agencies, employers, and social service providers to create Arkansas Careers Pathway Initiative (CPI). CPI's goal is to close the education gap so as to close the economic gap in Arkansas. They address this gap by providing childcare referral and underwriting, as well as other services for low-income parents. Research suggests CPI makes a difference when it comes to student retention. Of those enrolled in community colleges in Arkansas in Fall 2010, one quarter of CPI students withdrew by the next fall, in comparison to 40% of non-CPI students.<sup>34</sup>

However, the IWPR initiative to improve educational success among student parents, mentioned earlier, notes that referral services do not go far enough to meet the needs of student parents, who repeatedly claim that on-campus childcare would aid their educational pursuits.<sup>35</sup> Research bears out this claim. A study of community college students in New York State showed that access to campus-based childcare centers was positively related with

continued enrollment, persistence, and academic success among student parents.<sup>36</sup> Further attention to meeting the needs of student parents in Arkansas would likely improve women's educational and economic success.

It is often not just childcare issues but other financial hurdles that interrupt the educational careers of many single parents in Arkansas, the vast majority of whom are women. Thus, it is important to promote several interventions that can reduce the number of single parents and its costs for those trying to complete their educations.

First, because unplanned pregnancies often disrupt mothers' educational paths, it is important to focus on preventing such pregnancies. Providing young women a vision of a successful future, culturally sensitive education about reproductive health, and access to reproductive health services are all pieces of a comprehensive approach to limiting unintended pregnancies in our local communities.

Second, high-quality pre-kindergarten, afterschool, and summer programs provide crucial assistance to working parents who worry about the safety of their children in the afterschool and summer hours. At the same time, these programs produce a variety of educational and social benefits to the single parents' children that can create a brighter future for the young people fueled by education.



Finally, it is vital that young women who become pregnant do not stop their educational progress. The state Single Parent Scholarship Program, with local affiliates in most Arkansas counties, can be a crucial resource for these women in providing financial assistance as well as mentoring programs that increase markedly their likelihood of completing a degree.

### **GIRLS, WOMEN AND STEM**

***“I’ve noticed there’s a program they push around here for math and sciences for kids—the pictures are all little boys. There are no little girls on the pictures. They unconsciously push the fact that it’s for boys. They should have little girls on those pictures.”***

Research has demonstrated that role models are crucial in the development of career aspirations as they impact gender stereotypes.<sup>37</sup> The comment above illustrates a “common sense” notion of these findings: this respondent assumes that girls and boys will interpret the gender of the individuals shown in the pictures to mean something about the suitability of boys and girls and men and women in STEM fields. Indeed, a 2012 study of middle school students in New England showed that over 90% of the boys considered only male-dominated fields as career choices, while 74% of girls made male-dominated fields their first choice with the remainder choosing female-dominated fields.<sup>38</sup> Social science research has amply demonstrated that gendered beliefs about skill affect not just

individuals’ expectations for their own performance, but also their career aspirations. This, coupled with men’s reluctance to enter low-paid occupations that have become the province of women and therefore perceived to be stigmatizing occupations, results in the perpetuation of occupational sex segregation.<sup>39</sup> Improving the financial security of women and their families must begin with educating girls to want to pursue higher education, and with preparing them to pursue degrees that will allow them access to higher paying occupations.

These factors were highlighted in a recent presentation on non-traditional students in STEM fields given by Monieca West of the Arkansas Department of Higher Education to the Arkansas Department of Career Education.<sup>40</sup> In it, West advanced several strategies that should be coordinated to ensure girls and women are in the STEM pipeline. One strategy, which West refers to as “Image is Everything,” involves the subtle messages boys and girls are exposed to regarding gender appropriate occupational choices. West proposes that images of STEM occupations should include women and girls working—not just watching, should include women and men together, and should include men depicted in female-typed occupational settings, such as teaching and nursing.

West says simply encouraging girls at key times in their education is among the most important



of strategies for recruiting and retaining girls and women in STEM disciplines. The UCA report features this theme time and again. For example,

***“My counselor came to me and said, ‘Are you really sure that this is what you want to do?’ I explained to her my personal situation and she said, ‘Take the semester off, get your head together, and relax a little bit. You have incredible potential.’ It was because of her that I came back. I don’t know what would have happened to me if I had not returned and finished.”***

Another woman explained that she pursued a graduate degree because her principal encouraged her to:

***“Getting my masters’ degree was a very positive experience, but the hardest thing I’ve ever done in my life. My principal came to me...and he said, ‘You know, our guidance counselor is retiring. I heard you might be interested in getting your masters in school guidance.’ Well, I said that like two years ago in a conversation. Somebody really remembered that.”***

It’s important to note that these women attribute the completion of their education with the smallest of encouragement. These statements resonate with research on women in STEM disciplines in community colleges. The authors note the students “vividly” remember the exact moment when a

faculty member or career counselor told them they could become an engineer. They found that women students consistently said they did not realize that was possible until hearing that message from an important other, and lamented that message had not been communicated earlier in their school careers.<sup>41</sup>

Another strategy West advances for pulling women and other minorities into the STEM pipeline is to engage the community in this effort. The very fact of West’s presentation demonstrates an effort by the Arkansas Department of Higher Education to do this. The Girls of Promise® program hosted by The Women’s Foundation of Arkansas is another community effort that brings girls in middle school into contact with role models, with women in Arkansas who are working in STEM careers. There are many notable efforts in Arkansas to increase the STEM pipeline, generally, including the Arkansas STEM Coalition and Arkansas STEM Centers across the state. These organizations make natural partners for any effort to increase the number of girls and women in STEM fields in the state.

Community colleges have emerged as another point of focus for improving women’s educational outcomes. This focus is key, as nationally, in 2010, women made up 57% of students at community colleges, and more women enroll in community colleges than any other sector of higher education. Of the over 4 million women enrolled in community colleges in 2010, approximately one-quarter were



mothers, with half being married and the other half unmarried.<sup>42</sup> In Arkansas, the gender imbalance in community colleges is even greater, as women made up approximately 62% of those enrolled in community colleges in Fall 2013.<sup>43</sup> This means that the challenges of meeting the needs of this population in community colleges is likely greater than identified in the national context.

Women predominate in community colleges because compared to their four year counterparts, community colleges are more affordable and accessible and more likely to have open admissions policies. Moreover, community colleges have the potential for offering women opportunities for education in STEM disciplines they might not have had in high school or experience in the four year environment. Indeed, a recent study found that women who complete a bachelor's degree in STEM fields have been shown to be more likely than their male counterparts to have done some of their schooling at community colleges, suggesting that community colleges are a promising site of focus in the effort to improve women's access to STEM education.<sup>44</sup> The Institute for Women's Policy research recently published several recommendations for increasing the number of women pursuing STEM degrees at community colleges.<sup>45</sup> These recommendations include; actively recruiting women and student parents; improving and expanding developmental education; creating educational pathways and articulation with four year

institutions; improving curricula and instruction; and providing financial support and child care services. Each of these suggested initiatives has been at the forefront of planning in higher education circles as many states, including Arkansas, have moved to performance-based funding. The IWPR report suggests that we think strategically about how to target these initiatives toward recruiting and retaining women students in STEM fields.

*“Research has demonstrated that role models are crucial in the development of career aspirations as they impact gender stereotypes.”*



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## WHY IT MATTERS: WHEN WOMEN WIN, WE ALL WIN

Improving women's and girls' access to higher education, as well as improving their share of the kind of education that is most valuable in the labor market, is an important strategy for improving women's economic self-sufficiency, but by itself, this strategy is incomplete. A holistic strategy would include considerations of gender differences in family and labor market experiences. Establishing a paid parental leave for parents, as has been done in California, New Jersey, and Rhode Island, would assist mothers with their ability to remain employed across the birth of a child, a benefit with particular payoff among single mothers.<sup>46</sup> The provision of paid sick leave to employees—and the removal of the traditional probationary period prior to sick leave availability—would also improve women's ability to remain in the labor market.<sup>47</sup> Increasing the availability and affordability of child care is also crucial to women's abilities to remain stably employed. This is especially true of low-income women.<sup>48</sup>

Each of these policy innovations has been proposed for Arkansas in previous work on the status of women in the state. In particular, a 2012 report to the legislature investigated these issues and proposed re-establishing a Commission on the Status of Women that could serve as a body for coordinating efforts to improve women's status in Arkansas.<sup>49</sup> If we are serious about improving the economic security of Arkansans, one high impact

strategy would be to charge a coordinating body with facilitating the policy changes identified in this report.

Although we do not cite a dollar amount for the impact improving women's status in the state will have on the economic well-being of Arkansans, there can be no doubt that diminishing the hurdles girls and women face in the arena of education will benefit the state. Improving higher education attainment, as well as increasing women's share of STEM education, will improve the lives of state residents at every point in the life cycle. Higher education among women will mean improved birth outcomes, more students attaining grade-level proficiency in essential academic subjects, higher educational attainment among youth, which in turn means higher waged employment among adults. Indeed, when women win, we all win. One of the participants in the University of Central Arkansas study summarized this point perfectly:

*"In education, you can't lose with girls. It's evident. The men in the house depend on the women. How are you going to leave them out of the picture when their own husbands and families depend on them so much? So, do them a favor do and homage to the women who have gone before and give it back to the young women who are coming up."*



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