

**THE LOCAL ECONOMIC IMPACT  
OF THE  
COOPERATING RALEIGH COLLEGES:  
UPDATE 2013**

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## **EXECUTIVE SUMMARY**

**The six Cooperating Raleigh Colleges (CRC) – Meredith College, William Peace University, North Carolina State University, Shaw University, Saint Augustine’s University, and Wake Tech Community College– contributed an estimated \$8 billion to the local (Wake County) economy in 2013 and accounted for over 205,000 jobs. These values were derived by including both the direct and indirect contributions of the institutions’ spending on faculty and staff, current operations, and construction, and also by accounting for spending by students, by visitors to the institutions’ cultural and athletic events, and by alumni living in the local area. The totals represent 24 percent of all wage and salary income earned in the local economy and 43 percent of total employment.**

**Additionally, local public revenues in Wake County and its municipalities derived from the total income generated by the institutions were estimated to be \$160 million in 2013. These impacts clearly show that the institutions of the Cooperating Raleigh Colleges are significant economic forces in the local economy.**

**The assistance of Jennifer Spiker, director of Cooperating Raleigh Colleges, and financial officers from each of the CRC institutions is gratefully acknowledged.**

## INTRODUCTION

Higher education is a crucial component of the modern economy. Occupations requiring a college degree are the fastest growing in the workforce.<sup>1</sup> And to remain competitive in the global economy, it's well recognized that the training and innovation provided by higher education institutions are essential.<sup>2</sup>

In addition, in the communities where colleges and universities are located, their activities can account for a significant part of local economic activity. These impacts derive from several sources: (1) the spending of colleges and universities on faculty and staff, (2) the spending on non-salary operations, (3) the spending of students attending the colleges and universities, (4) the spending of visitors to the institutions' cultural and athletic events, (5) construction spending by the institutions, and (6) the spending of alumni of the institutions who remain in the local economy.

Each of these activities will have – what economists term – direct and indirect effects. Direct effects are those from the initial spending associated with the activity – here, the spending from faculty and staff, operations, students, visitors, construction, and alumni – after accounting for the proportion of the spending that immediately leaves the area. The indirect effect accounts for the re-spending of the initial spending. For example, the spending of faculty and staff in the local economy becomes income to local business owners and their workers. The owners and workers, in turn, spend some of this income in the local economy where it becomes income to still more owners and workers.<sup>3</sup> However, at each round of spending, a significant amount “leaks out” of the local economy in the form of purchases from non-local businesses. “Multipliers” applied to

the initial level of spending allow the indirect effects to be measured both in terms of total income and total employment.

The total (direct plus indirect) income and employment in the local economy attributed to local colleges and universities can also be expressed as a percentage of all local income and all local employment to gauge the institutions' relative size. Also, local public revenues generated from the total economic impact of the institutions can be estimated and expressed as both a dollar amount and a percentage of all local public revenue.

## **METHOD**

Data were collected from each of the six CRC institutions for 2013. The key data items were:

- (1) annual spending for faculty and staff
- (2) annual budget for all operations except faculty and staff salaries and student financial assistance
- (3) annual number of full time equivalent students and the percentage living off-campus
- (4) annual spending by visitors to the institution's cultural and athletic events
- (5) five year average annual construction spending
- (6) number of alumni living in the local economy, and
- (7) permanent faculty and staff employment.

To conform to data availability of the multipliers for indirect effects, the local economy was defined as Wake County.<sup>4</sup>

**Table 1. Calculations for Direct, Indirect, and Total Income Effects of CRC Institutions**

<u>Direct Effect</u>	<u>Indirect Effect</u>	<u>Total Effect</u>
A. (faculty & staff salary x 0.7) = 1A	1A x 0.5 = 2A	1A + 2A = 3A
B. (operations budget x 0.5) = 1B	1B x 0.7 = 2B	1B + 2B = 3B
C. (((# students x % off-campus x \$13,730) + (# students x % on-campus x \$4232)) x 0.7) = 1C	1C x 0.5 = 2C	1C + 2C = 3C
D. (cultural and athletic spending x 0.7) = 1D	1D x 0.7 = 2D	1D + 2D = 3D
E. (construction spending x 0.5) = 1E	1E x 0.5 = 2E	1E + 2E = 3E
F. (((0.8 x 4 yr. alumni x \$49,786) + (0.2 x 4 yr. alumni x \$29,872) + (0.8 x 2 yr. alumni x \$32,192) + (0.2 x 2 yr. alumni x \$19,315)) x 0.7) = 1F	1F x 0.5 = 2F	1F + 2F = 3F
G. <i>Grand total effect:</i>		3A + 3B + 3C + 3D + 3E + 3F = 3G

Table 1 shows the calculations performed to derive the direct, indirect, and total income effects of the institutions. Row A gives the direct effect of faculty and staff salary (30% immediately leaves the county), the indirect effect (0.5 of the direct effect) and the total effect (sum of the direct and indirect effects).<sup>5</sup> In row B, 50 percent of the initial operational spending (not including faculty and staff salary and student financial assistance) is estimated to become income to local businesses and workers, and the indirect effect then adds 70 percent to this value.<sup>6</sup>

The impact of student spending (row C) is calculated separately for students living off-campus and those living on-campus. For students living off-campus, annual

expenditures include room and board, transportation, books and supplies, and a miscellaneous category, for a total of \$13,730.<sup>7</sup> Tuition and fees are not included because those expenditures become part of the institution's revenues and are then spent on salaries, operations, or student financial assistance – the latter, of course – being captured by student spending. For students living on-campus, room and board expenditures are not included because, again, this spending becomes revenue for the institutions and its disbursement is part of other expenditures. Therefore, the annual spending for on-campus students includes transportation, books and supplies, and miscellaneous, for a total of \$4232 annually.<sup>8</sup> Again, 30% of this spending is estimated to immediately leave the county, but indirect effects add 50% to spending.

For cultural and athletic spending (row D), 30% initially leaves the county and indirect effects adds 70% to the total<sup>9</sup> For the impact of construction spending (row E), 50% initially leaves the county and indirect effects add 50%.<sup>10</sup>

Lastly, the income of the alumni living in the local economy will depend on the work status of the individuals and the type of institution (row F). It is assumed the proportion of working alumni to retired alumni is the same as for the population as a whole (80 percent working and 20 percent retired). Each working alumnus from a 4-year institution is assigned an average annual income of \$49,786, while each retired alumnus is assigned 60 percent of this value, resulting in an average annual income of \$29,872. For alumni from 2-year institutions, the comparable values are \$32,192 and \$19,315. The direct effect loses 30% to out-of-county spending, and the indirect effect adds 50% to spending.<sup>11</sup>

The total impact is the sum of the individual six effects (row G).

**Table 2. Calculations for Direct, Indirect, and Total Employment Effects of CRC Institutions**

	<u>Direct Effect</u>	<u>Indirect Effect</u>	<u>Total Effect</u>
AA. faculty & staff employment = 1AA		$1AA \times 0.64 = 2AA$	$1AA + 2AA = 3AA$
BB.	-	-	-
CC. $(1C/\$1,000,000) \times 19 = 1CC$		$(1C/\$1,000,000) \times 7.5 = 2CC$	$1CC + 2CC = 3CC$
DD.	-	$(1D/\$1,000,000) \times 9 = 2DD$	$2DD = 3DD$
EE. $(1E/\$1,000,000) \times 8 = 1EE$		$(1E/\$1,000,000) \times 6 = 2EE$	$1EE + 2EE = 3EE$
FF. $(0.8 \times \text{alumni}) = 1FF$		$\text{alumni} \times 0.4 = 2FF$	$1FF + 2FF = 3FF$
GG. <i>Grand total effect:</i>			$3AA + 3BB + 3CC + 3DD + 3EE + 3FF = 3GG$

An argument can be made that only the part of alumni salary associated with a college degree should be used in row F. If this approach is taken, the income values in row F are reduced by 50%.<sup>12</sup> The counter-argument is that the institutions are responsible for alumni taking jobs in the local economy, and therefore the full salary should be applied. Impacts for both approaches will be generated.

Table 2 shows similar calculations for employment impacts. In row AA, faculty and staff employment is the direct effect, and the indirect effect is estimated at 0.64 jobs per direct faculty and staff job.<sup>13</sup> In row BB, no employment effects are listed for operational spending because those positions are already included in 2AA as indirect

effects. In row CC, the direct employment effect from student spending is estimated at 19 jobs per \$1,000,000 of direct spending, and the indirect effect is put at 7.5 jobs per \$1,000,000 of direct spending.<sup>14</sup> There is no direct employment effect for cultural and athletic event spending (row DD) because these jobs are included in 2AA. The indirect employment effect from cultural and athletic event spending is calculated as 9 per \$1,000,000 of direct spending.<sup>15</sup> The local direct employment effect from construction spending is estimated as 8 jobs per \$1,000,000 in direct spending, and the indirect effect is 6 jobs per \$1,000,000 of direct spending.<sup>16</sup> Finally, the direct employment effect of alumni is the estimated number of working alumni, and the indirect employment effect is put at 0.4 jobs per alumnus.<sup>17</sup>

To judge the relative contribution of the institutions to the local (Wake County) economy, 3G is calculated as a percentage of total Wake County wage and salary income in 2013, and 3GG is taken as a percentage of total Wake County employment in 2013. Total Wake County wage and salary income in 2013 is estimated to be \$34 billion, and total Wake County employment in the year was 475,272.<sup>18</sup> In addition, public revenues paid to local governments (Wake County government and the twelve municipalities within the county) can be estimated by multiplying 3G by the local public revenue to Wake County governments paid per dollar of wage and salary income. For 2013, this rate was 0.02.<sup>19</sup>

## **RESULTS**

Table 3 gives the results for the total income effects of the CRC institutions on the local (Wake County) economy. Results are presented in total and for each institution.



The impacts are impressive. The CRC institutions, through their spending on salaries, operations, and construction, combined with the spending of their students, visitors to cultural and athletic events, and the spending of alumni living in the local economy, generated an estimated **\$8 billion of income** in Wake County in 2013. This accounts for **24 percent of total wage and salary income** in the county in that year.

Among the individual components of the impact, the spending of alumni dominates, accounting for 72 percent of the total effect, followed by faculty and staff salaries (12 percent), student spending (8 percent), operations (5 percent) construction spending (2 percent), and cultural and athletic event spending (under 1 percent).

The total economic contribution of the CRC institutions to local public revenues is also significant. The \$8 billion of income generated an estimated **\$160 million of locally raised public revenue** in 2013.

If only that part of the alumni salary related to a college education is used for the alumni effect, then the numbers in the alumni row in Table 3 are reduced by 50 percent, the total income generated becomes \$5 billion (14.7 percent of total salary and wage income in Wake County), and the public revenue impact becomes \$100 million. These are still significant numbers.

The employment impacts of the CRC institutions are given in Table 4. Total (direct and indirect) employment associated with the institutions' economic activities and alumni is estimated to be **205,413 jobs in 2013**. The greatest impact is again from alumni, followed by faculty and staff, student spending, construction, and cultural and

**Table 3. Estimates of the Total Income Effects of the CRC Institutions on the Wake County Economy, 2013.**

\$ millions

	<b>Meredith</b>	<b>NCSU</b>	<b>Peace</b>	<b>Shaw</b>	<b>St. Augustine's</b>	<b>Wake Tech</b>	<b>Total</b>
<b>Faculty &amp; Staff Salaries</b>	24.2	842.1	7.9	14.0	14.4	97.1	999.7
<b>Operations</b>	21.7	364.7	9.5	17.2	19.9	12.9	445.9
<b>Student Spending</b>	15.5	389.2	7.5	21.6	9.8	170.6	614.2
<b>Event Spending</b>	0.01	25.0	0.0	0.4	0.0	0.01	25.4
<b>Construction</b>	5.0	109.5	2.3	1.3	1.0	16.8	135.9
<b>Alumni</b>	321.9	2701.2	113.6	78.6	139.8	2389.6	5744.7
<b>Grand Total</b>	388.3	4431.7	140.8	133.1	184.9	2687.0	<b>7965.8</b>

**Table 4. Estimates of the Employment Effects of the CRC Institutions on the Wake County Economy.**

**Jobs (full-time and part-time)**

	<b>Meredith</b>	<b>NCSU</b>	<b>Peace</b>	<b>Shaw</b>	<b>St. Augustine's</b>	<b>Wake Tech</b>	<b>Total</b>
<b>Faculty &amp; Staff Salaries</b>	631	13,251	223	718	674	3310	18,807
<b>Student Spending</b>	436	5919	114	329	159	2594	9551
<b>Event Spending</b>	0	133	0	2	0	0	135
<b>Construction</b>	37	804	17	9	7	123	997
<b>Alumni</b>	8033	67,399	2834	1961	3488	92,208	175,923
<b>Grand Total</b>	9137	87,506	3188	3019	4328	98,235	<b>205,413</b>

athletic events. The total employment impact in 2013 represents **43 percent of all Wake County** jobs in that year.

## **CONCLUSIONS**

The Cooperating Raleigh Colleges – Meredith College, North Carolina State University, William Peace University, Shaw University, Saint Augustine’s University, and Wake Tech Community College – are a major economic engine in the local (Wake County) economy. An analysis of the latest available data for 2013 indicates the economic impact of the institutions and of their alumni in the local economy totals \$8 billion and 205,000 jobs. The monetary impact is near one-fourth of all wage and salary income in the local economy, and the employment impact is two-fifths of all local jobs. Furthermore, the economic activities of the institutions and their alumni are estimated to have contributed \$160 million to locally-generated public revenue in 2013.

In the modern global economy, with the need for a well educated workforce to compete in international commerce recognized as a top priority, the education mission of our colleges and universities is more critical than perhaps at any time in our history. This report demonstrates that the economic contributions of higher education institutions to a local economy can also be crucial and powerful.

## ENDNOTES

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<sup>1</sup> North Carolina Commission on Workforce Development, *State of the North Carolina Workforce Report*, Raleigh, 2011.

<sup>2</sup> Friedman, Thomas L. *The World is Flat*. New York: Farrar, Straus, and Giroux, 2005.

<sup>3</sup> Frequently, the indirect effect is split into two parts – the spending of businesses (or suppliers) and the spending of workers. The former is termed the indirect effect, and the latter is called the induced effect. Here, both are combined and identified as the indirect effect.

<sup>4</sup> The source of the multipliers is the IMPLAN program (IMPLAN Group, LLC, Huntersville, NC). The program provides information at the state and county levels.

<sup>5</sup> The coefficients are for retail sales in Wake County.

<sup>6</sup> The coefficients are for colleges and universities in Wake County.

<sup>7</sup> The annual student spending number is from The College Board ([www.collegeboard.com](http://www.collegeboard.com)), and the coefficients are for retail sales in Wake County.

<sup>8</sup> *Ibid.*

<sup>9</sup> The coefficients are for performing arts and spectator sports in Wake County.

<sup>10</sup> The coefficients are for commercial and institution buildings in Wake County.

<sup>11</sup> The values are from the 2012 U.S. Census data for Wake County, updated to 2013 using trends average trends in earning from 2012 to 2013.

<sup>12</sup> The proportion is based on the finding that the average college graduate in Wake County earns approximately twice as much as the average high school graduate, thereby implying that half of the college graduate's earnings are due to their high school degree.

<sup>13</sup> The coefficients are for retail sales for Wake County.

<sup>14</sup> *Ibid.*

<sup>15</sup> The coefficients are for performing arts and spectator sports for Wake County.

<sup>16</sup> The coefficients are for commercial and institutional construction for Wake County.

<sup>17</sup> The coefficients are for retail sales for Wake County.

<sup>18</sup> Aggregate wage and salary income and employment are from the U.S. Dept. of Commerce.

<sup>19</sup> Local public revenue excludes monies from intergovernmental transfers. Data are for 2012 and extrapolated to 2013 and are from the North Carolina State Treasurer's Office.