

**THE LOCAL ECONOMIC IMPACT
OF THE
COOPERATING RALEIGH COLLEGES**

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EXECUTIVE SUMMARY

The five Cooperating Raleigh Colleges (CRC) – Meredith College, Peace College, North Carolina State University, Shaw University, and Saint Augustine’s College – contributed an estimated \$ 5.5 billion to the local (Wake County) economy in 2007 and accounted for over 85,000 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 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 25 percent of all wage and salary income earned in the local economy and 20 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 \$443 million in 2007. These impacts clearly show that the institutions of the Cooperating Raleigh Colleges are significant economic forces in the local economy.

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INTRODUCTION

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

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. 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.³ 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 five CRC institutions for 2007. 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.⁴

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

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 = 1A	$1A \times 0.2 = 2A$	$1A + 2A = 3A$
B. (operations budget x 0.4) = 1B	$1B \times 0.3 = 2B$	$1B + 2B = 3B$
C. (# students x % off-campus x \$10,794) + (# students x % on-campus x \$3536) = 1C	$1C \times 0.2 = 2C$	$1C + 2C = 3C$
D. cultural and athletic spending = 1D	$1D \times 0.3 = 2D$	$1D + 2D = 3D$
E. (construction spending x 0.4) = 1E	$1E \times 0.2 = 2E$	$1E + 2E = 3E$
F. $(0.86 \times \text{alumni} \times \$60,789) +$ $(0.14 \times \text{alumni} \times \$36,473) = 1F$	$1F \times 0.2 = 2F$	$1F + 2F = 3F$
G. <i>Grand total effect:</i>		$3A + 3B + 3C +$ $3D + 3E + 3F$ $= 3G$

salary, the indirect effect (0.2 of the direct effect) and the total effect (sum of the direct and indirect effects).⁵ In row B, 40 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 30 percent to this value.⁶

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,⁷ for a total of \$10,794.⁷ 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 \$3536 annually.⁸

The impacts of visitor spending at cultural and athletic events (row D) follow the same format as for faculty and staff salary and operations spending.⁹ For the impact of construction spending (row E), only 40 percent of spending is taken as the initial effect because of the estimate that 60 of college and university construction project expenditures are paid to out-of-county firms.¹⁰

Lastly, the income of the alumni living in the local economy will depend on the work status of the individuals (row F). It is assumed the proportion of working alumni to retired alumni is the same as for the population as a whole (86 percent working and 14 percent retired). Each working alumnus is assigned an average annual income of \$60,789, while each retired alumnus is assigned 60 percent of this value, resulting in an average annual income of \$36,472. The incomes are then re-spent to create indirect effects.¹¹ The total impact is the sum of the individual six effects (row G).

It should be pointed out that there can be some disagreement over the alumni effect. An argument can be made that only that part of the alumni salary associated with a college degree should be used in row F. If this approach is taken, the income values in row F would be reduced by 50 percent.¹² However, one counter-argument is that the

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	$1AA \times 0.29 = 2AA$	$1AA + 2AA = 3AA$
BB. -	$(1B/\$1,000,000) \times 6 = 2BB$	$2BB = 3BB$
CC. $(1C/\$1,000,000) \times 22.5 = 1CC$	$(1C/\$1,000,000) \times 4.5 = 2CC$	$1CC + 2CC = 3CC$
DD. -	$(1D/\$1,000,000) \times 8 = 2DD$	$2DD$
EE. $(1E/\$1,000,000) \times 10 = 1EE$	$(1E/\$1,000,000) \times 5 = 2EE$	$1EE + 2EE = 3EE$
FF. $(0.86 \times \text{alumni}) = 1FF$	$\text{alumni} \times 0.2 = 2FF$	$1FF + 2FF = 3FF$
GG. <i>Grand total effect:</i>		$3AA + 3BB + 3CC + 3DD + 3EE + 3FF = 3GG$

institutions are responsible for the alumni taking jobs in the local economy – 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 0.29 jobs per direct faculty and staff job.¹³ In row BB, no direct employment effect is listed for operational spending because those positions are already included in 1AA. The indirect employment effect of operational spending is estimated as 6 jobs per \$1,000,000 of direct spending.¹⁴ In row CC, the direct employment effect from student spending is estimated at 22.5 jobs per \$1,000,000 of direct spending, and the indirect effect is put at 4.5 jobs per

\$1,000,000 of direct spending.¹⁵ There is no direct employment effect for cultural and athletic event spending (row DD) because these jobs are included in 1AA. The indirect employment effect from cultural and athletic event spending is calculated as 8 per \$1,000,000 of direct spending.¹⁶ The local direct employment effect from construction spending is estimated as 10 jobs per \$1,000,000 in direct spending, and the indirect effect is 5 jobs per \$1,000,000 of direct spending.¹⁷ Finally, the direct employment effect of alumni is the estimated number of working alumni, and the indirect employment effect is put at 0.2 jobs per alumnus.¹⁸

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 2007, and 3GG is taken as a percentage of total Wake County employment in 2007. Total Wake County wage and salary income in 2007 is estimated to be \$21.6 billion, and total Wake County employment in the year was 419,432.¹⁹ 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 2007, this rate was 0.08.²⁰

RESULTS

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

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 **\$5.5 billion of income** in Wake County in 2007. This accounts for **25 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% of the total effect, followed by faculty and staff salaries (17 percent), student spending (6 percent), operations (3 percent) construction spending (1 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 \$5.5 billion of income generated an estimated **\$443 million of locally raised public revenue** in 2007.

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 \$3.5 million (16.2 percent of total salary and wage income in Wake County), and the public revenue impact becomes \$283 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 **85,372 jobs in 2007**. The greatest impact is again from alumni, followed by faculty and staff, student spending, operations, construction, and cultural and athletic events. The total employment impact in 2007 represents **20 percent of all Wake County jobs** in that year.

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

\$ millions

	Meredith	NCSU	Peace	Shaw	Saint Augustine's	Total
Faculty & Staff Salaries	26.5	823.1	19.9	56.6	15.0	941.1
Operations	7.7	151.5	2.1	11.5	9.3	182.1
Student Spending	16.0	286.4	5.0	15.4	8.6	331.4
Event Spending	0.9	25.5	0.007	0.12	0.08	26.6
Construction	2.0	47.2	0.8	0.01	0.60	50.6
Alumni	378.7	2857.5	145.3	413.2	206.6	4001.3
Grand Total	431.8	4191.2	173.1	496.8	240.2	5533.1

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

Jobs

	Meredith	NCSU	Peace	Shaw	Saint Augustine's	Total
Faculty & Staff Salaries	757	10,201	266	965	439	12,628
Operations	89	1748	23	133	107	2100
Student Spending	359	6445	113	346	194	7457
Event Spending	6	157	0	1	1	165
Construction	62	1475	26	0	18	1581
Alumni	5830	43,845	2226	6360	3180	61,441
Grand Total	7103	63,871	2654	7805	3939	85,372

CONCLUSIONS

The Cooperating Raleigh Colleges – Meredith College, North Carolina State University, Peace College, Shaw University, and Saint Augustine’s College – are a major economic engine in the local (Wake County) economy. An analysis of the latest available data for 2007 indicates the economic impact of the institutions and of their alumni in the local economy totals \$5.5 billion and 85,372 jobs. The monetary impact is over one-fourth of all wage and salary income in the local economy, and the employment impact is one-fifth of all local jobs. Furthermore, the economic activities of the institutions and their alumni are estimated to have contributed \$443 million to locally raised public revenue in 2007.

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

¹ North Carolina Commission on Workforce Development, *State of the North Carolina Workforce: An Assessment of the State's Labor Force Demand and Supply, 2007-2017*, Raleigh, January 2007.

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

³ 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.

⁴ The source of the multipliers is the IMPLAN program from Mig Inc. The program provides information at the state and county levels.

⁵ The multiplier of 0.2 for the indirect effect is from Mig Inc. and is for retail sales for Wake County.

⁶ The 40 percent initial value and 0.3 multiplier are from Mig Inc. for Wake County and for the sector colleges and universities.

⁷ The annual student spending number is from The College Board, with the 2006 value (latest available) updated to 2007 using the annual Consumer Price Index inflation rate for 2007 (www.chronicle.com/weekly/alamanc/2006/nation/0103303.htm, and www.bls.gov).

⁸ The source of the spending number is The College Board's 2006 value, updated to 2007. The multiplier is for retail sales for Wake County.

⁹ The multiplier is for performing arts and spectator sports (Mig Inc.)

¹⁰ Michael L. Walden, *Economic Impact of the Bond Construction Projects at North Carolina State University on the Local Economy*, North Carolina State University, March 2001. The multiplier of 0.2 is for commercial and institution buildings in Wake County (Mig Inc.).

¹¹ The value of \$60,789 is a 2007 estimate of the annual income of persons in Wake County with college degrees. The proportion of workers and retirees and of retirement income as a percent of work income are from the U.S. Census (U.S. Census Bureau, *Census 2000 Summary File 3*, and U.S. Census Bureau, *2006 American Community Survey*).

¹² This is based on the finding that the average college graduate in Wake County earns approximately twice as much as the average high school graduate (U.S. Census Bureau, *Census 2000 Summary File 3*, and U.S. Census Bureau, *2006 American Community Survey*).

¹³ The indirect employment multiplier of 0.29 is for retail sales and is for Wake County from Mig Inc.

¹⁴ The indirect employment multiplier is for college and university spending and is for Wake County from Mig Inc.

¹⁵ The multipliers are for retail sales and are for Wake County from Mig Inc.

¹⁶ The multiplier is for performing arts and spectator sports for Wake Co. from Mig Inc.

¹⁷ The multipliers are for commercial and institutional construction for Wake Co. from Mig Inc.

¹⁸ The indirect multiplier is for retail sales for Wake County and from Mig Inc.

¹⁹ The wage and salary number is estimated from the 2006 actual value from the U.S. Department of Commerce (www.bea.gov) and then updated to 2007 by the increase in insured wage and salary payments in Wake County between the second quarter of 2006 and the second quarter of 2007 (www.ncesc.com). The employment number is the average total employment in Wake County in 2007 from the household employment survey (www.ncesc.com).

²⁰ Local public revenue excludes monies from intergovernmental transfers. Data are for 2006 and extrapolated to 2007 and are from the North Carolina State Treasurer's Office.