

# DEMONSTRATING THE COLLECTIVE ECONOMIC VALUE OF NORTH CAROLINA'S HIGHER EDUCATION INSTITUTIONS

# FACT SHEET

FEBRUARY 2015

North Carolina's Higher Education Institutions (NCHE institutions) include 110 institutions, including the 16 universities of the University of North Carolina System\*, 36 independent colleges and universities, and 58 community colleges. Also included are the hospitals and clinics associated with the NCHE institutions. This study analyzes the collective economic value these institutions create.

NCHE institutions improve higher education delivery throughout the state and help students increase their employability and potential. By facilitating new research, entrepreneurship, and drawing students and visitors to North Carolina, the institutions also generate new dollars and opportunities for the state. The purpose of this analysis is to assess the collective impact of NCHE institutions on the state economy and the benefits generated for students, North Carolina as a whole, and taxpayers.

Our analysis shows that in FY 2012-13, the \$22 billion in payroll and operations spending of NCHE institutions, together with their construction spending and the spending of their students, visitors, alumni, and start-up companies, created **\$63.5 billion** in added state income. This is equal to approximately **14.6%** of the total Gross State Product of North Carolina, and is equivalent to creating **1,021,158** new jobs.

## IMPACT ON THE STATE BUSINESS COMMUNITY

During the analysis year, FY 2012-13, NCHE institutions spent **\$10.7 billion** on payroll and benefits for **186,076** full-time and part-time employees, and spent another **\$11.3 billion** on goods and services to carry out their day-to-day operations and research. This initial round of spending creates more spending across other businesses throughout the state economy, resulting in the commonly referred to multiplier effects. We estimate these multiplier effects in this study and report the *additional* economic activity that is created by the initial spending of NCHE institutions and the affiliated medical institutions.\*\* Impacts are reported in terms of total income, which is analogous to Gross State Product, and the corresponding number of jobs created.

\* Note: The University of North Carolina (UNC) system also includes the North Carolina School of Science and Mathematics, the North Carolina Arboretum, UNC Public Television, along with other affiliated entities. This study only includes the economic impact of the UNC system's 16 universities, along with the clinical activities of the UNC Medical Center and East Carolina University Health Services.

\*\* Note: Our estimated economic impacts are conservative in that we directly take into account the fact that state and local dollars spent on the institutions could have been spent elsewhere in North Carolina if not directed toward the NCHE institutions, and thus would have created some economic impacts regardless. We account for these alternative uses of funds directly in our analysis by (i) assuming that if funds were not directed to the NCHE institutions, they would have been returned to the taxpayer and generate economic impacts through household spending on goods and services, and (ii) subtracting the estimated economic impacts generated by this alternative use of funds from the estimated economic impacts of the NCHE institutions. Thus, we report a net impact of the NCHE institutions that is above and beyond what would have occurred had the funds been returned to the taxpayer.

## INTELLECTUAL PROPERTY CREATED BY NCHE INSTITUTIONS

	INVENTIONS	PATENT APPLICATIONS	LICENSES
2009-10	388	206	152
2010-11	480	276	172
2011-12	589	276	168
2012-13	550	268	219
<b>TOTAL</b>	<b>2,007</b>	<b>1,026</b>	<b>711</b>

### IMPACT OF SPIN-OFF COMPANIES

Spin-off companies include those that were created and fostered through programs at NCHE institutions that support entrepreneurial business development, as well as companies that were created by faculty, students, or alumni from their work at NCHE institutions. The collective impact of spin-off companies related to NCHE institutions in FY 2012-13 was \$2.1 billion in added state income, equivalent to 26,862 new jobs. These impacts are important because they comprise a significant part of the state's business environment. The connection between NCHE institutions and their related spin-off companies is less direct than with start-up companies licensing technology of NCHE institutions. For this reason, the impact of business spin-offs related to NCHE institutions are presented separately for the institutions in this analysis.

These economic impacts break down as follows:

#### Operations spending impact

- Payroll and non-pay expenditures to support day-to-day operations (less clinical, research, and extension) of NCHE institutions amounted to **\$6.7 billion** and **\$7.1 billion**, respectively. The net impact of the institutions' operations spending in North Carolina during the analysis year was approximately **\$8.7 billion** in added state income, which is equivalent to creating **149,555** jobs.

#### Clinical spending impact

- In FY 2012-13, NCHE institutions spent **\$5.3 billion** on clinical and hospital faculty and staff and other costs to support their operations in North Carolina. The total net impact of these clinical operations in the state was **\$6.8 billion** in added state income, which is equivalent to creating **90,501** new jobs.

#### Research spending impact

- Research activities of NCHE institutions impact the state economy by employing people and making purchases for equipment, supplies, and services. They also facilitate new knowledge creation throughout North Carolina through inventions, patent applications, and licenses. In FY 2012-13, NCHE institutions spent **\$1.1 billion** on payroll to support research activities.
- Research spending of NCHE institutions generated **\$2.6 billion** in added state income for the North Carolina economy, which is equivalent to creating **39,292** new jobs.

#### Construction spending impact

- NCHE institutions commissioned in-state and out-of-state contractors to build or renovate their facilities during the analysis year. This spending generated a short-term infusion of income and jobs in the state economy.
- The net impact of the institutions' construction spending in FY 2012-13 was **\$376.4 million** in added state income, equivalent to **12,959** new jobs.

## IMPACTS CREATED BY NCHE INSTITUTIONS IN FY 2012-13

INCOME	JOBS
\$8.7 billion	149,555
Operations spending impact	
\$6.8 billion	90,501
Clinical spending impact	
\$2.6 billion	39,292
Research spending impact	
\$376.4 million	12,959
Construction spending impact	
\$1.5 billion	8,189
Business start-up impact	
\$112.1 million	1,459
Extension service impact	
\$675 million	12,339
Student spending impact	
\$372.4 million	9,515
Visitor spending impact	
\$42.4 billion	697,347
Alumni impact	
\$63.5 billion	1,021,158
Total impact	

### Business start-up impact

- NCHE institutions create an exceptional environment that fosters innovation and entrepreneurship, evidenced by the number of start-up companies related to NCHE institutions in the state. In FY 2012-13, start-up companies related to NCHE institutions created **\$1.5 billion** in added state income for the North Carolina economy, which is equivalent to creating **8,189** jobs.

### Extension spending impact

- The North Carolina Cooperative Extension Service is a partnership between North Carolina State University and North Carolina A&T State University. Its purpose is to provide education and technology to help address the needs and local problems of the state's diverse communities. North Carolina State University also operates an Industrial Extension Service program that caters to North Carolina's industries and businesses.
- In FY 2012-13, these universities and their partner counties spent **\$78.3 million** to support extension services, adding **\$112.1 million** in state income for the North Carolina economy, which is equivalent to creating **1,459** new jobs.

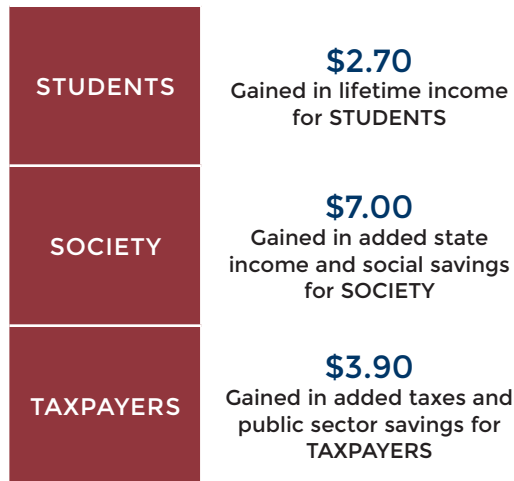
### Student spending impact

- Around **14%** of graduate and undergraduate students attending NCHE institutions originated from outside the state. Some of these students relocated to North Carolina and spent money on groceries, transportation, rent, and so on at North Carolina businesses.
- The expenditures of students who relocated to the state during the analysis year added approximately **\$675 million** in state income for the North Carolina economy, which is equivalent to creating **12,339** new jobs.

### Visitor spending impact

- Out-of-state visitors attracted to North Carolina for activities at NCHE institutions brought new dollars to the economy through their spending at hotels, restaurants, gas stations, and other state businesses.

## FOR EVERY \$1 SPENT BY...



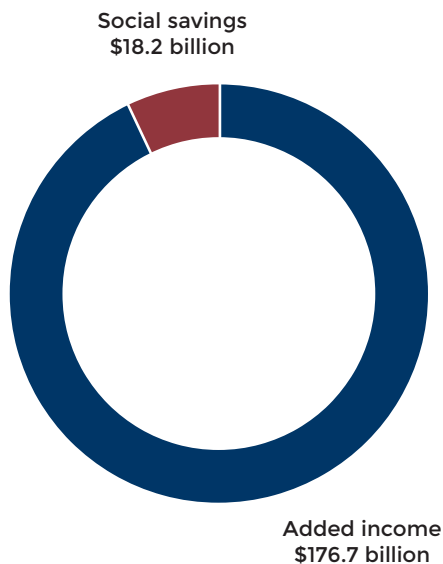
- Visitor spending added approximately **\$372.4 million** in state income for the North Carolina economy, which is equivalent to creating **9,515** new jobs.

### Alumni impact

- Over the years, students gained new skills, making them more productive workers, by studying at NCHE institutions. Today, hundreds of thousands of these former students are employed in North Carolina.
- The accumulated contribution of former students of NCHE institutions currently employed in the North Carolina workforce amounted to **\$42.4 billion** in added state income, which is equivalent to creating **697,347** new jobs.

## RETURN ON INVESTMENT TO STUDENTS, SOCIETY, AND TAXPAYERS

### PRESENT VALUE OF ADDED INCOME AND SOCIAL SAVINGS IN NORTH CAROLINA



### Student perspective

- Students attending NCHE institutions during FY 2012-13 paid a total of **\$3.7 billion** to cover the cost of tuition, fees, books, and supplies. They also forwent **\$10.4 billion** in money that they would have earned had they been working instead of learning.
- In return for the money students invest to earn their degrees, they will receive a present value of **\$37.9 billion** in estimated increased earnings over their working lives.
- This translates to a return of **\$2.70** in higher future income for every \$1 that students invest in their education from NCHE institutions, or an average annual return of **12.4%**.

### Societal perspective

- North Carolina as a whole will receive a present value of **\$176.7 billion** in added state income over the course of the students' working lives. Communities will also benefit from **\$18.2 billion** in present value social savings related to reduced crime, lower unemployment, and increased health and well-being across the state.

## ABOUT **emsi**

**Economic Modeling Specialists International** turns labor market data into useful information that helps organizations understand the connection between economies, people, and work. Since 2000, EMSI has completed numerous economic impact studies for educational institutions across the US, Canada, the UK, and Australia. It also provides industry-leading labor market data via software and reports to higher education professionals, workforce planners, and regional developers in the U.S. and internationally. For more information, visit [www.economicmodeling.com](http://www.economicmodeling.com). For a description of the data and methods used to derive the results for each education sector, please visit the University of North Carolina website at [www.northcarolina.edu/economic-impact-2015](http://www.northcarolina.edu/economic-impact-2015), the North Carolina Independent Colleges and Universities website at [www.ncicu.org/economic-impact-2015](http://www.ncicu.org/economic-impact-2015), and the North Carolina Community College System website at [www.ncccommunitycolleges.edu/emsi-study](http://www.ncccommunitycolleges.edu/emsi-study).

- For every dollar that society spent on educations at NCHE institutions during the analysis year, North Carolina communities will receive a cumulative value of **\$7.00** in benefits, for as long as the 2012-13 students of NCHE institutions remain active in the state workforce.

### Taxpayer perspective

- In FY 2012-13, state and local taxpayers in North Carolina invested **\$4.3 billion** (excluding clinical operations and funding for private institutions) to support the operations of NCHE institutions. The net present value of the added tax revenue stemming from the students' higher lifetime incomes and the increased output of businesses amounts to **\$17 billion** in benefits to taxpayers. Savings to the public sector add another **\$3.4 billion** due to a reduced demand for government-funded services in North Carolina. Total taxpayer benefits thus come to **\$20.4 billion**. In order to accurately compare taxpayer benefits to costs, the added tax revenue and public sector savings generated by private institutions are excluded, yielding a net total of **\$17 billion** in benefits to taxpayers.
- Dividing benefits to taxpayers by the associated costs yields a **3.9** benefit-cost ratio, i.e., every \$1 in costs returns \$3.90 in benefits. The average annual return on investment for taxpayers is **12.7%**.



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