



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

**BOARD OF TRUSTEES  
INNOVATION & IMPACT COMMITTEE  
MARCH 25, 2015, 2:10PM  
MAGNOLIA ROOM C  
THE RIZZO CONFERENCE CENTER**

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**OPEN SESSION**

**FOR INFORMATION ONLY**

(No formal action is requested at this time)

1. [Demonstrating Impact: The Use of Public Benefit as a Metric](#)  
*Ron Strauss, Executive Vice Provost & Chief International Officer*  
*Lynn Williford, Assistant Provost for Institutional Research & Assessment*
2. [Economic Impact of UNC-CH: Report on UNC System's Recent EMSI Analysis, UNC Research, & Startup Impacts](#) (Attachment A)  
*Don Hobart, Associate Vice Chancellor for Research*
3. [RTP Regional Impact Measurements](#) (Attachment B)  
*Judith Cone, Interim Vice Chancellor for Commercialization & Economic Development*

\*Some of the business to be conducted is authorized by the N.C. Open Meetings Law to be conducted in closed session.

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# Demonstrating Impact: The Use of Public Benefit as a Metric

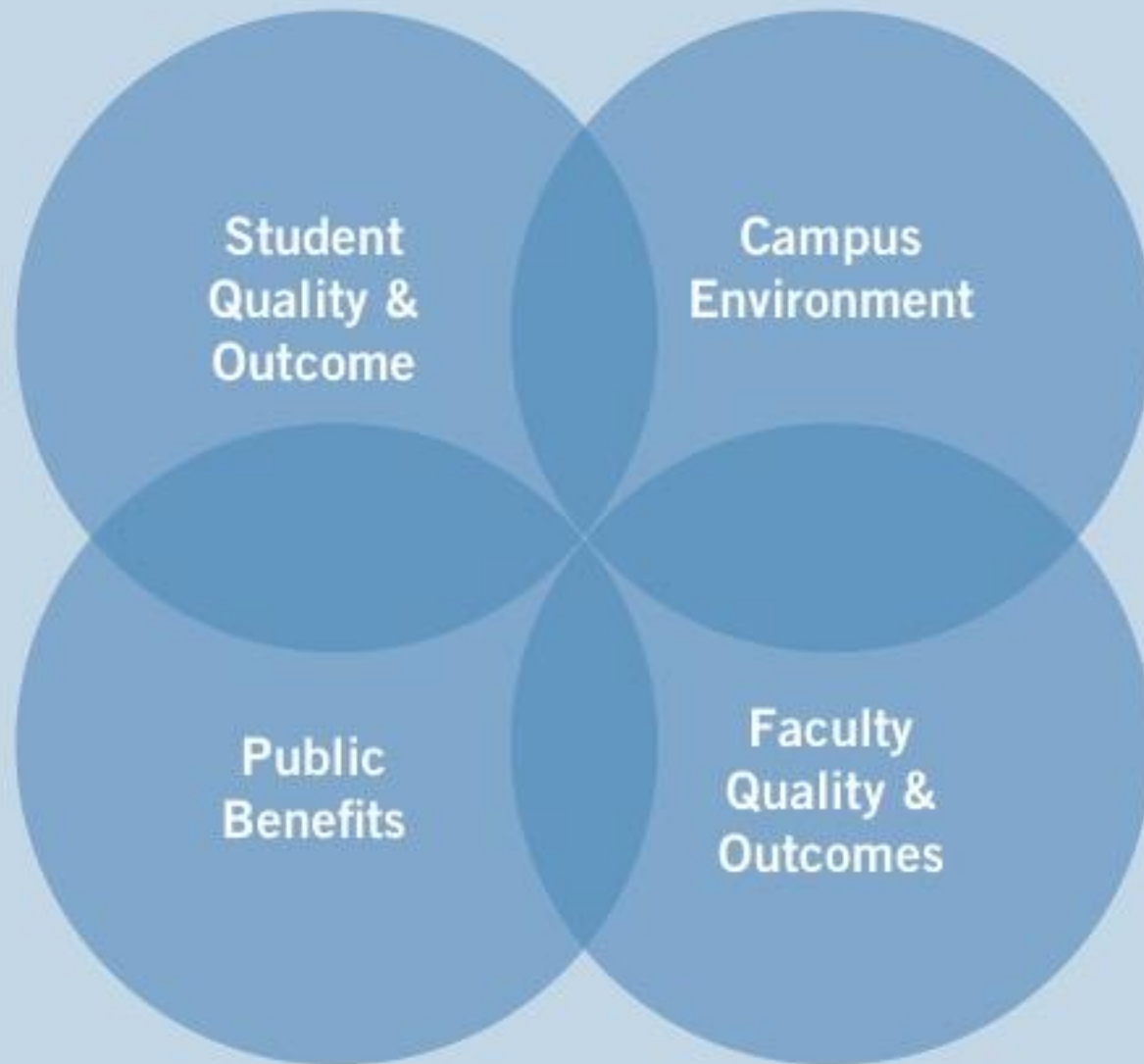
Presented to:

The Innovation and Impact Subcommittee  
UNC-Chapel Hill Board of Trustees

Dr. Ron Strauss, Executive Vice Provost

Dr. Lynn Williford, Assistant Provost for Institutional Research & Assessment

**MARCH 25, 2015**



# Major Themes

Research Revenue

State Support

Affordability

Contributions from Students & Graduates

Institutional Reputation

University Resources that Benefit the Public

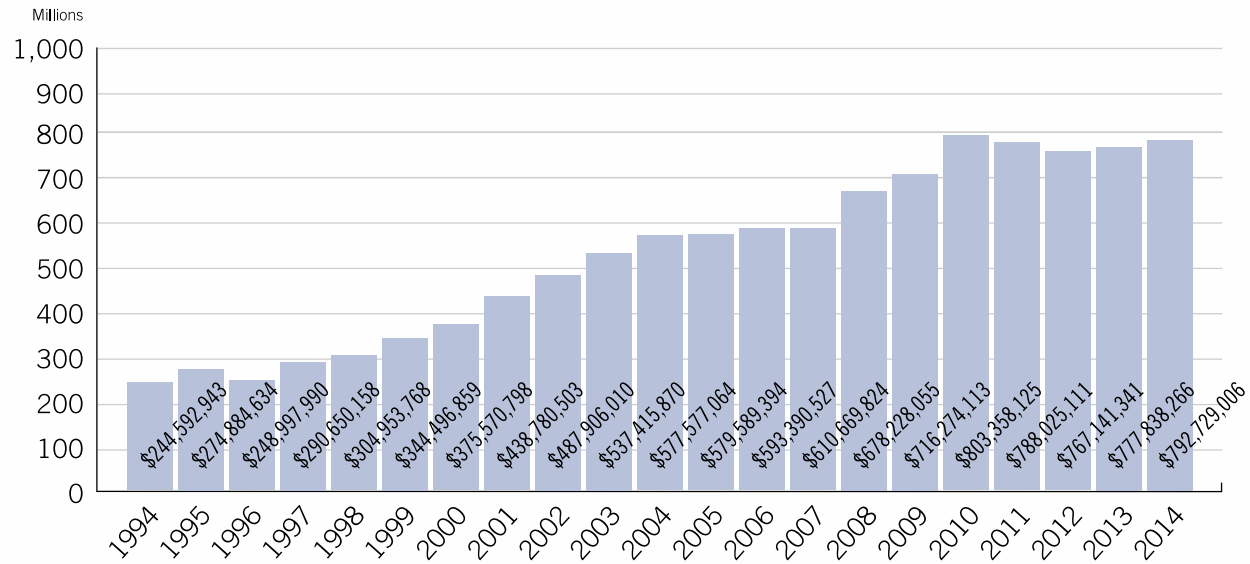
# RESEARCH REVENUE

## Research and Development Expenditures FY 2012

Total		Federally-Funded		Business-Sponsored	
Johns Hopkins	\$2,106,185	Johns Hopkins	\$1,857,580	Duke	\$226,200
Michigan	\$1,322,711	Washington	\$909,652	Berkeley	\$92,103
Wisconsin	\$1,169,779	Michigan	\$791,729	Texas	\$67,890
Washington	\$1,109,008	Pennsylvania	\$669,970	UCLA	\$51,311
Duke	\$1,009,911	Pittsburgh	\$637,857	Johns Hopkins	\$47,102
UCLA	\$1,003,375	<b>UNC-Chapel Hill</b>	<b>\$606,348</b>	Pennsylvania	\$42,744
<b>UNC-Chapel Hill</b>	<b>\$884,791</b>	Duke	\$587,268	Michigan	\$41,947
Pittsburgh	\$866,638	Wisconsin	\$580,661	Minnesota	\$29,657
Pennsylvania	\$847,077	UCLA	\$539,054	So. California	\$28,353
Minnesota	\$826,173	Minnesota	\$485,462	<b>UNC-Chapel Hill</b>	<b>\$26,722</b>
Berkeley	\$730,348	So. California	\$443,842	Wisconsin	\$23,152
Northwestern	\$631,078	Northwestern	\$393,074	Washington	\$19,731
So. California	\$623,544	Texas	\$354,873	Virginia	\$15,173
Texas	\$621,538	Maryland	\$340,180	Northwestern	\$15,023
Maryland	\$502,406	Berkeley	\$338,759	Pittsburgh	\$12,060
Virginia	\$383,359	Virginia	\$240,254	Maryland	\$6,353

## RESEARCH REVENUE

### Sponsored Research Awards

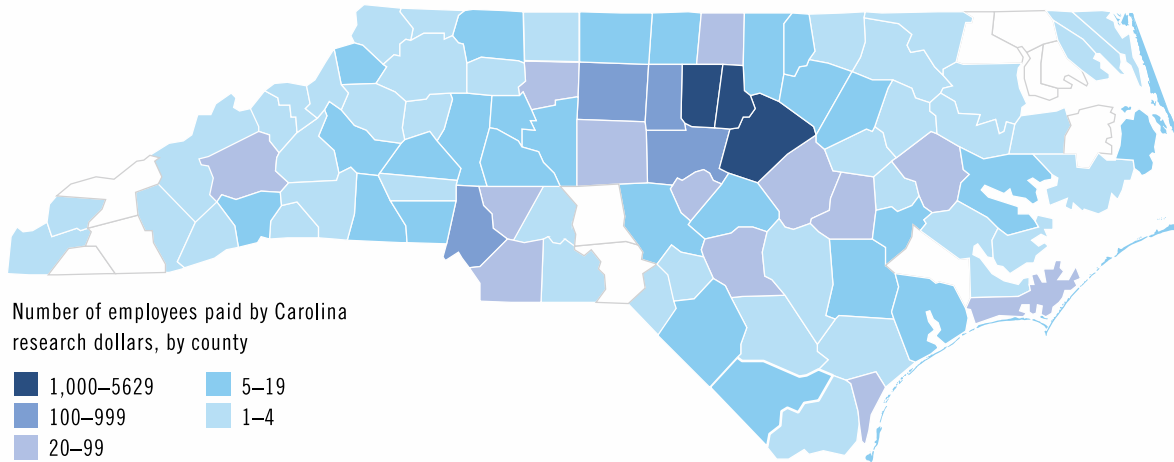


## RESEARCH REVENUE

# Economic Impact of Research to North Carolina FY 2013

### Jobs for North Carolina Citizens

UNC—Chapel Hill research directly supported over 10,300 individuals with a total payroll of over \$300M



### Support for Local Businesses

UNC—Chapel Hill research projects funded more than:

- 14,000 orders to NC-based vendors
- 1,100 different vendors in 80 counties
- \$70 million in purchases in NC

### Technical Assistance and Support

UNC—Chapel Hill faculty and students provided roughly \$79 million in support of professionals, public officials, and organizations in NC.

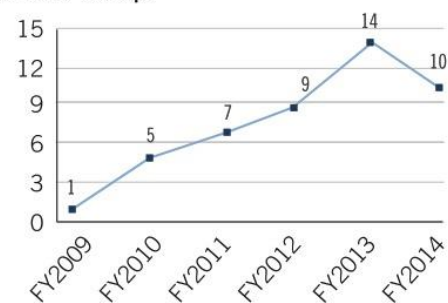
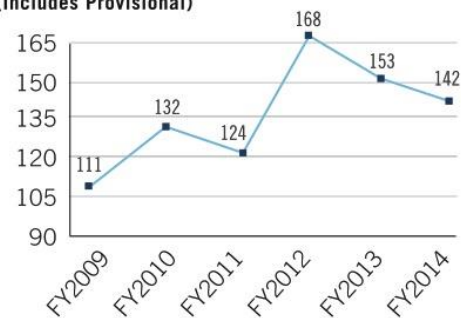
## Startup Activity

## Startup Companies Formed FY 2013

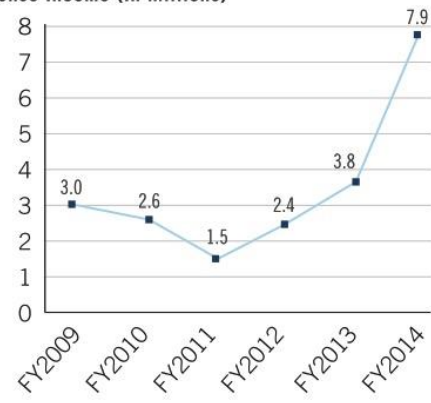
Pennsylvania	26
Washington	17
Minnesota	14
<b>UNC-Chapel Hill</b>	<b>14</b>
Northwestern	11
Michigan	9
Pittsburgh	9
Duke	9
Johns Hopkins	8
Wisconsin	7
So. California	6
Virginia	4

## UNC-Chapel Hill Growth in Startup Activity

Number of Startups

Number of US Patents Filed  
(Includes Provisional)

License Income (In Millions)





STATE SUPPORT

State Appropriations  
as Percentage of Revenue  
FY 2013

Maryland	25.2%
<b>UNC–Chapel Hill</b>	<b>18.4%</b>
Minnesota	17.8%
Wisconsin	15.3%
Texas	12.2%
Berkeley	14.1%
UCLA	7.9%
Washington	4.9%
Virginia	4.8%
Michigan	4.2%

#### AFFORDABILITY

### Educational Value for the Cost to Undergraduate NC Residents

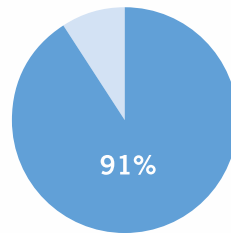
**Kiplinger: Best Values in Public Colleges  
2015 In-State**

	Rank
UNC–Chapel Hill	1
Virginia	2
Berkeley	4
UCLA	5
Michigan	6
Wisconsin	8
Maryland	9
Washington	11
Texas	14
Minnesota	32
Pittsburgh	47

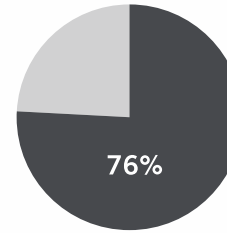
**AFFORDABILITY**

## Student Satisfaction with Value and Affordability

UNC-Chapel Hill



Peers



**AFFORDABILITY**

**Tuition and Fees 2014–15**

	Undergraduate Resident	Undergraduate Non-Resident	Graduate Resident	Graduate Non-Resident
<b>UNC–Chapel Hill</b>	<b>\$8,336</b>	<b>\$33,418</b>	<b>\$10,594</b>	<b>\$27,805</b>
Maryland	\$9,428	\$29,721	\$15,938	\$32,642
Texas	\$9,816	\$34,860	\$11,026	\$22,702
Wisconsin	\$10,410	\$26,660	\$11,864	\$25,191
Washington	\$12,394	\$33,513	\$16,296	\$28,344
Berkeley	\$12,972	\$35,850	\$12,972	\$28,074
Virginia	\$13,006	\$41,510	\$16,688	\$26,246
UCLA	\$13,029	\$35,907	\$12,571	\$27,673
Minnesota	\$13,626	\$20,876	\$16,538	\$24,760
Michigan	\$14,008	\$43,049	\$20,078	\$40,564
Pittsburgh	\$17,772	\$28,168	\$21,542	\$34,760
<b>Public Peer Average</b>	<b>\$12,647</b>	<b>\$33,013</b>	<b>\$15,553</b>	<b>\$29,097</b>

**AFFORDABILITY**

## Undergraduate Student Debt

**Graduating Class of 2012–13**

	From All Sources		From Federal Sources	
	% of Students Who Borrowed	Average Debt	% of Students Who Borrowed	Average Debt
Virginia	35%	\$21,875	35%	\$19,074
Pennsylvania	36%	\$19,798	34%	\$19,844
Duke	37%	\$18,456	36%	\$13,605
<b>UNC–Chapel Hill</b>	<b>39%</b>	<b>\$17,602</b>	<b>38%</b>	<b>\$16,150</b>
Berkeley	43%	\$17,468	42%	\$16,530
So. California	45%	\$28,474	44%	\$22,918
Maryland	45%	\$25,254	44%	\$19,552
Johns Hopkins	45%	\$22,808	44%	\$17,438
Northwestern	47%	\$24,334	46%	\$18,623
Michigan	47%	\$27,163	46%	\$22,387
Washington	47%	\$21,263	47%	\$20,000
UCLA	49%	\$20,229	48%	\$18,629
Wisconsin	50%	\$25,664	47%	\$22,690
Texas	50%	\$25,300	49%	\$22,295
Minnesota	61%	\$28,384	60%	\$21,526
Pittsburgh	69%	\$34,623	69%	\$24,402

CONTRIBUTIONS FROM STUDENTS & GRADUATES

## Public Engagement of Students

### Buckley Public Service Scholars

	Program Graduates	Total Participants	Total Hours of Service
2002-03	n/a	78	2,560
2003-04	n/a	248	16,013
2004-05	16	218	50,413
2005-06	39	444	54,159
2006-07	92	538	105,790
2007-08	114	614	105,675
2008-09	165	725	138,798
2009-10	180	875	163,061
2010-11	190	639	185,215
2011-12	292	561	190,713
2012-13	267	699	167,881
2013-14	261	692	164,974
<b>Totals</b>	<b>1,616</b>	<b>6,331</b>	<b>1,345,251</b>

CONTRIBUTIONS FROM STUDENTS & GRADUATES

## Service Learning Courses

	APPLES Courses Taught	Total Participants	Total Hours of Service
2000–2001	30	719	30,580
2001–2002	40	966	39,986
2002–2003	36	922	37,543
2003–2004	36	928	36,886
2004–2005	42	1,133	44,222
2005–2006	62	1,325	53,770
2006–2007	69	1,425	58,046
2007–2008	89	1,709	66,392
2008–2009	80	1,765	69,084
2009–2010	100	2,439	93,948
2010–2011	110	2,837	109,062
2011–2012	101	2,718	103,854
2012–2013	88	2,725	104,895
2013–2014	89	2,347	92,020
<b>Totals</b>	<b>972</b>	<b>23,958</b>	<b>940,288</b>

CONTRIBUTIONS FROM STUDENTS & GRADUATES

## Teach for America and Peace Corps Volunteers

### Undergraduate Alumni Only

Institution	Ranking for Number of Volunteers	
	2014 Teach for America	2013 Peace Corps
Berkeley	2	7
Duke	12 (tie)	16
Maryland	17 (tie)	23
Michigan	1	5
Minnesota		10
Northwestern	11	
Pennsylvania	15	16
So. California	12	
Texas	4	14
UCLA	3	6
<b>UNC-Chapel Hill</b>	<b>5 (tie)</b>	<b>25</b>
Virginia	13 (tie)	2
Wisconsin	10	1
Washington		2



CONTRIBUTIONS FROM STUDENTS & GRADUATES

UNC–Chapel Hill Alumni

OF THE 296,187 KNOWN LIVING ALUMNI IN 2014:

54%

are in NC

44%

are in other states

2%

are in other countries

## INSTITUTIONAL REPUTATION

# US News Best Colleges' Rankings

### Undergraduate Program

Institution	National Rank
Duke	8
Pennsylvania	8
Johns Hopkins	12
Northwestern	13
Berkeley	20
UCLA	23
Virginia	23
So. California	25
Michigan	29
<b>UNC-Chapel Hill</b>	<b>30</b>
Wisconsin	47
Washington	48
Texas	53
Maryland	62
Pittsburgh	62
Minnesota	71

## INSTITUTIONAL REPUTATION

### Times Higher Education World's Top 100 Universities Rankings

	International Rank
Berkeley	8
UCLA	12
Johns Hopkins	15
Pennsylvania	16
Michigan	17
Duke	18
Northwestern	21
Washington	26
Texas	28
Wisconsin	29
<b>UNC–Chapel Hill</b>	<b>46</b>
Minnesota	46
So. California	75
Pittsburgh	91
Virginia	130
Maryland	132

#### INSTITUTIONAL REPUTATION

### Shanghai Jiao Tong University 2014 Academic Rankings of World Universities

	International Rank
Berkeley	4
UCLA	12
Washington	15
Pennsylvania	16
Johns Hopkins	17
Michigan	22
Wisconsin	24
Northwestern	28
Minnesota	30
Duke	31
<b>UNC–Chapel Hill</b>	<b>36</b>
Texas	39
Maryland	43
So. California	51
Pittsburgh	65
Virginia	101–150

## INSTITUTIONAL REPUTATION

### Center for World University Rankings 2014

	International Rank
Berkeley	7
Pennsylvania	14
UCLA	15
Johns Hopkins	19
Michigan	21
Northwestern	23
Wisconsin	25
Duke	26
Texas	29
Washington	32
Virginia	41
<b>UNC-Chapel Hill</b>	<b>45</b>
Minnesota	49
So. California	51
Pittsburgh	53
Maryland	76

UNIVERSITY RESOURCES  
THAT BENEFIT THE PUBLIC

## Endowment Assets 2012–13

Michigan	\$8,272,366,000
Pennsylvania	\$7,741,396,000
Northwestern	\$6,283,130,000
Duke	\$6,040,973,000
Virginia	\$5,106,876,214
So. California	\$3,868,355,000
Texas	\$3,012,894,720
Pittsburgh	\$2,956,738,766
Johns Hopkins	\$2,918,546,000
Minnesota	\$2,610,544,078
Washington	\$2,432,421,073
<b>UNC–Chapel Hill</b>	<b>\$2,344,279,691</b>
Wisconsin	\$2,295,273,339
UCLA	\$1,411,797,000
Berkeley	\$1,411,707,000
Maryland	\$440,497,952

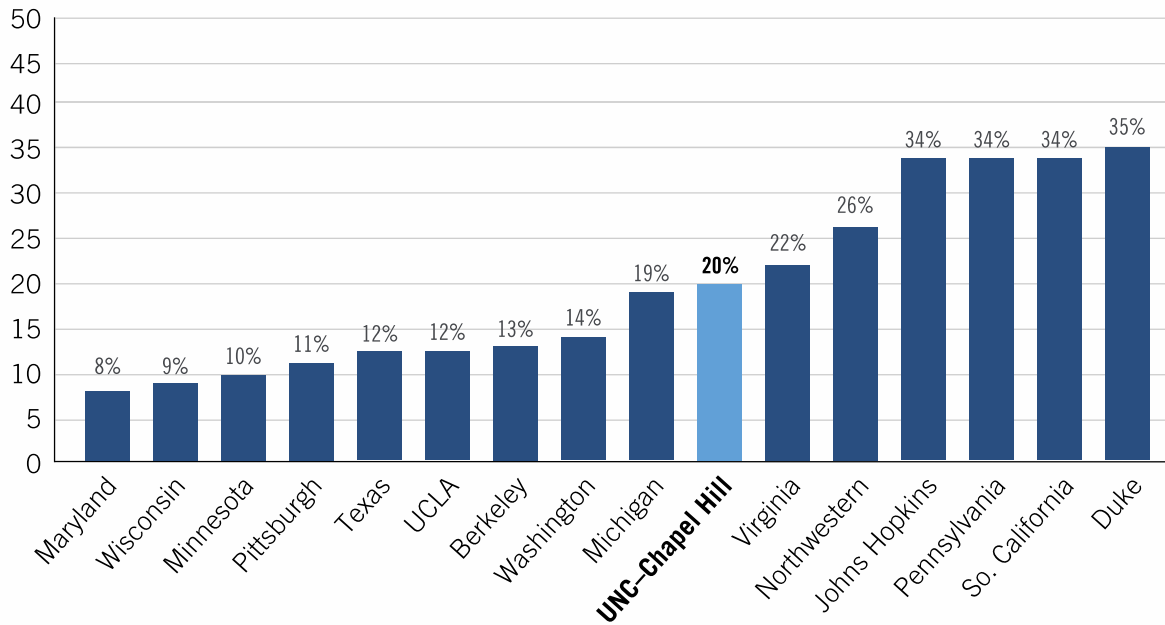
UNIVERSITY RESOURCES  
THAT BENEFIT THE PUBLIC

## Library Volumes Held 2012–13

Michigan	12,971,705
UCLA	11,834,508
Berkeley	11,742,250
Texas	10,265,878
Washington	9,334,275
Wisconsin	9,110,080
<b>UNC–Chapel Hill</b>	<b>7,598,807</b>
Minnesota	7,316,157
Pennsylvania	7,298,138
Duke	7,243,932
Pittsburgh	6,831,539
Northwestern	6,108,181
Virginia	5,514,735
So. California	5,158,192
Johns Hopkins	4,579,070
Maryland	4,308,063

UNIVERSITY RESOURCES THAT BENEFIT THE PUBLIC

Percentage of Alumni Giving 2013–14





## UNIVERSITY RESOURCES THAT BENEFIT THE PUBLIC

### Events and Facilities Offered to the Public

UNC–Chapel Hill shares its resources with the public through performing arts, athletics, and other entertainment events, and its many cultural and educational centers.

Visitors and members of the University community who participate in these activities also contribute to the state and local economy.

Examples of attendance at some of these campus events and facilities during FY 2013 include:

Carolina Performing Arts Series	47,120
Music Department Concerts	17,200
PlayMakers Repertory Company and Other Productions	54,600
Ackland Art Museum	55,193
Morehead Planetarium & Science Center	271,516
NC Botanical Gardens	152,982
Intercollegiate Athletics Events	961,557



## News Release

For immediate use

### **Analysis finds UNC-Chapel Hill and UNC Health Care Medical Center contribute over \$7 billion to North Carolina economy**

*Study finds UNC-Chapel Hill and UNC Medical Center are a major driver of the state's growth*

(Chapel Hill, N.C. – Feb. 18, 2015)— A new study analyzing the economic impact of UNC System institutions reveals the University of North Carolina at Chapel Hill and UNC Health Care Medical Center together added \$7.1 billion to North Carolina's economy in fiscal year 2013 – an amount representing nearly 100,000 jobs in the state.

The analysis is part of a larger study conducted by Economic Modeling Specialists International (EMSI) on the impact of all institutions of higher education in North Carolina. Its findings, which include the impact of UNC-Chapel Hill and UNC Health Care Medical Center, were released today (Feb. 18).

The two institutions send ripples of spending through North Carolina's economy and stimulate additional economic activity through the purchase of goods and services by salaried employees, the procurement of new equipment and supplies needed for state-of-the-art research and clinical activities, and the influx of money from the students and visitors the University attracts each year.

Additional economic impact comes also from the infusion of income and jobs into the economy from University construction, new inventions and patents, the creation of startup businesses, and the long-term benefit brought by UNC-Chapel Hill's highly skilled alumni, many of whom work in the state.

"This study illustrates how critical UNC-Chapel Hill and the UNC Health Care Medical Center are to the prosperity of our state," said UNC-Chapel Hill Chancellor Carol L. Folt. "All the UNC system universities provide tremendous value in different ways, and we all have wonderful stories to tell. This analysis underscores the large economic benefit that comes to our state from having great universities."



UNC Health Care Medical Center, with 805 inpatient beds and nearly 1.4 million clinical visits, provided state-of-the-art care to more than 37,000 North Carolina residents during the measured year. The salaries and purchases of UNC Health Care Medical Center added \$2 billion to the state's economy, representing 24,000 additional full-time jobs.

"At a time when North Carolina's health care needs are rising and the number of physicians is plummeting, our economic impact cannot be underestimated," said William L. Roper, MD, MPH, Dean, UNC School of Medicine and CEO, UNC Health Care System. "Because of UNC Health Care and the UNC School of Medicine, patients across the state can connect with world-class treatment, education and research. As the state's flagship health care system, we are ensuring a brighter future for all of our communities across all of our state."

The \$7.1 billion added to North Carolina's economy in fiscal year 2013 can be attributed to the economic impact from the University (\$5.1 billion) and the UNC Medical Center (\$2 billion). The University's contributions include: operations (\$1 billion), research (\$992.5 million), construction (\$56.5 million), start-ups that license University technology (\$179 million), students (\$54.9 million), visitors (\$130 million) and alumni (\$2.6 billion).

The EMSI analysis also documented the economic impact of the University's culture of research, innovation and entrepreneurship. More than 150 North Carolina businesses got their start at UNC-Chapel Hill. Today, they employ nearly 8,000 people in the state and 35,000 worldwide. The study found these businesses provide a nearly \$1.6 billion boost to the state's economy annually – an amount representing an additional 15,111 jobs. Spinouts that license technology from UNC-Chapel Hill accounted for \$179 million of the total, while businesses like Quintiles Transnational that emerged without technology licenses from the work of University faculty or students made up the remaining \$1.4 billion.

"These numbers demonstrate the value of creating a culture of entrepreneurship, investing in research, and supporting new technology and startup businesses," said Judith Cone, the chancellor's advisor for innovation and entrepreneurship and UNC-Chapel Hill's interim vice chancellor for commercialization and economic development.

UNC-Chapel Hill faculty secured more than \$790 million in new research contracts and grants in fiscal year 2013, up nearly \$15 million from the previous year, and Chancellor Folt recently announced the creation of a new venture fund to help early stage startups overcome funding gaps and translate research into business opportunities.

UNC General Administration commissioned the analysis on behalf of all UNC system universities and their medical centers. It is part of the first large-scale study of how North Carolina's institutions of higher education add value to the state's economy. EMSI used a conservative



methodology to demonstrate the impact of state universities, computing the value of alternative uses of funds being spent on university operations and subtracting that from total institutional impact. The result is an accounting of the unique and added economic benefits attributable to investments in higher education.

EMSI is an economic modeling firm that turns labor market data into useful information that reveals the connection between major enterprises, the economy, people and employment. The UNC system report can be found at <http://www.northcarolina.edu/economic-impact-2015>.

-Carolina-

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[hobart@email.unc.edu](mailto:hobart@email.unc.edu)



## **Fact Sheet**

### **Economic Impact: UNC-Chapel Hill and UNC Health Care Medical Center in FY 2013**

- UNC-Chapel Hill and UNC Health Care Medical Center added **\$7.1 billion to the N.C. economy**, which **represents nearly 100,000 jobs** in the state.
  - UNC-Chapel Hill (\$5.1 billion)
    - Operations (\$1 billion)
    - Research (\$992.5 million)
    - Construction (\$56.5 million)
    - Technology Licensed Start-ups (\$179 million)
    - Students (\$54.9 million)
    - Visitors (\$130 million)
    - Alumni (\$2.6 billion)
  - UNC Health Care Medical Center Impact (\$2 billion)

### **Economic Impact of UNC Health Care Medical Center in FY 2013**

- The UNC Health Care Medical Center provides care to more than 37,000 North Carolinians, accounting for 1.4 million clinical visits.
- The UNC Health Care Medical Center added **\$2 billion to the N.C. economy**, which **represents 24,000 jobs** in the state.

### **Economic Impact of UNC-Chapel Hill Business Startups in FY 2013**

- Over 150 N.C. companies, employing over 8,000 people in the state today and 35,000 worldwide, have emerged as startups from UNC-Chapel Hill.
- UNC-Chapel Hill startups added nearly **\$1.6 billion to the N.C. economy**, which **represents over 15,000 jobs** in the state.
  - UNC-Chapel Hill startups with no technology license (\$1.4 billion)
  - UNC-Chapel Hill start-ups holding a technology license (\$179 million)

# FACT SHEET

## *Demonstrating the Economic Value of the University of North Carolina at Chapel Hill to the state of North Carolina*

JANUARY 2015

The University of North Carolina at Chapel Hill (UNC-CH) improves higher education delivery throughout the state and helps students increase their employability and potential. By facilitating new research and entrepreneurship and drawing students and visitors to North Carolina, the university also generates new dollars and opportunities for the state. The purpose of this analysis is to assess the impact of UNC-CH on the state economy. The analysis also looks at the benefits generated for students, North Carolina as a whole, and taxpayers.

*Our analysis shows that in FY 2012-13, the \$2.6 billion in payroll and operations spending of UNC-CH, together with its construction spending and the spending of its students, visitors, alumni, and start-up companies, created **\$5.1 BILLION** in added state income. This is equal to approximately **1.2%** of the total Gross State Product of North Carolina, and is equivalent to creating **75,812** new jobs.*

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## IMPACT ON THE STATE BUSINESS COMMUNITY

During the analysis year, FY 2012-13, UNC-CH spent **\$1.4 BILLION** on payroll and benefits for **16,988** full-time and part-time employees, and spent another **\$1.2 BILLION** on goods and services to carry out its 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 UNC-CH.\* Impacts are reported in terms of total income, which is analogous to Gross State Product, and the corresponding number of jobs created.

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\* Note: Our estimated economic impacts are conservative in that we directly take into account the fact that state dollars spent on the university could have been spent elsewhere in North Carolina if not directed toward UNC-CH, 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 UNC-CH, 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 UNC-CH. Thus, we report a net impact of UNC-CH that is above and beyond what would have occurred had the funds been returned to the taxpayer.

## INTELLECTUAL PROPERTY CREATED BY UNC-CH

	INVENTIONS	PATENTS	LICENSES
2009-10	125	27	51
2010-11	142	33	45
2011-12	160	31	61
2012-13	138	25	56
TOTAL	565	116	213

## IMPACT OF SPIN-OFF COMPANIES

Spin-off companies include those that were created and fostered through programs at UNC-CH that support entrepreneurial business development, as well as companies that were created by faculty, students, or alumni from their work at UNC-CH. The collective impact of spin-off companies related to UNC-CH in FY 2012-13 was \$1.4 billion in added state income, equivalent to 13,713 new jobs. These impacts are important because they comprise a significant part of the state's business environment. The connection between UNC-CH and its related spin-off companies is less direct than with start-up companies licensing technology of UNC-CH. For this reason, the impact of business spin-offs related to UNC-CH are presented separately for the university 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 research) of UNC-CH amounted to **\$994.7 MILLION** and **\$661.7 MILLION**, respectively. The net impact of the university's operations spending in North Carolina during the analysis year was approximately **\$1 BILLION** in added state income, which is equivalent to creating **12,129** jobs.

### Research spending impact

- Research activities of UNC-CH 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, patents, and licenses. In FY 2012-13, UNC-CH spent **\$440.7 MILLION** on payroll to support research activities.
- Research spending of UNC-CH generates **\$992.5 MILLION** in added state income for the North Carolina economy, which is equivalent to creating **12,941** new jobs.

### Construction spending impact

- UNC-CH built or renovated a number of its 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 university's construction spending in FY 2012-13 was **\$56.5 MILLION** in added state income, equivalent to **1,843** new jobs.

### Business start-up impact

- UNC-CH creates an exceptional environment that fosters innovation and entrepreneurship, evidenced by the number of start-up companies in the state created to license and commercialize technology developed by UNC-CH. In FY 2012-13, start-up companies related to the university created **\$179 MILLION** in added state income for the North Carolina economy, which is equivalent to creating **1,396** jobs.



## IMPACTS CREATED BY UNC-CH IN FY 2012-13

INCOME	JOBS
<b>\$1 BILLION</b>	<b>12,129</b>
Operations spending impact	
<b>\$992.5 MILLION</b>	<b>12,941</b>
Research spending impact	
<b>\$56.5 MILLION</b>	<b>1,843</b>
Construction spending impact	
<b>\$179 MILLION</b>	<b>1,396</b>
Business start-up impact	
<b>\$54.9 MILLION</b>	<b>1,004</b>
Student spending impact	
<b>\$130 MILLION</b>	<b>3,321</b>
Visitor spending impact	
<b>\$2.6 BILLION</b>	<b>43,179</b>
Alumni impact	
<b>\$5.1 BILLION</b>	<b>75,812</b>
Total impact	



### Student spending impact

- Around **26%** of graduate and undergraduate students attending UNC-CH 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 **\$54.9 MILLION** in state income for the North Carolina economy, which is equivalent to creating **1,004** new jobs.

### Visitor spending impact

- Out-of-state visitors attracted to North Carolina for activities at UNC-CH brought new dollars to the economy through their spending at hotels, restaurants, gas stations, and other state businesses.
- Visitor spending added approximately **\$130 MILLION** in state income for the North Carolina economy, which is equivalent to creating **3,321** new jobs.

### Alumni impact

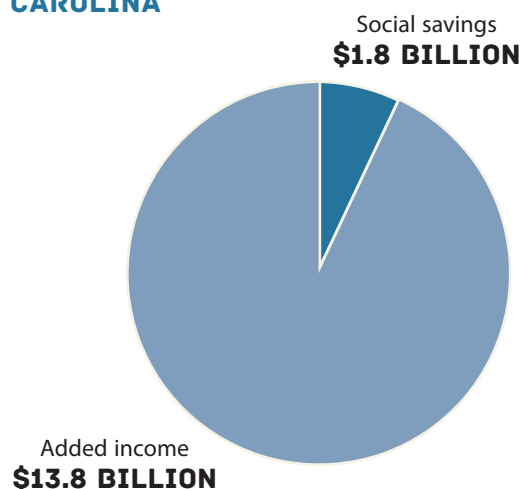
- Over the years, students gained new skills, making them more productive workers, by studying at UNC-CH. Today, thousands of these former students are employed in North Carolina.
- The accumulated contribution of former UNC-CH students currently employed in the North Carolina workforce amounted to **\$2.6 BILLION** in added state income to the North Carolina economy, which is equivalent to creating **43,179** new jobs.



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

<b>STUDENTS</b>	<b>\$3.10</b> Gained in lifetime income for STUDENTS
<b>SOCIETY</b>	<b>\$4.70</b> Gained in added state income and social savings for SOCIETY
<b>TAXPAYERS</b>	<b>\$2.10</b> Gained in added taxes and public sector savings for TAXPAYERS

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



### 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).

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

### Student perspective

- Students attending UNC-CH during FY 2012-13 paid a total of **\$382.9 MILLION** to cover the cost of tuition, fees, books, and supplies. They also forwent **\$649.2 MILLION** 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 **\$3.2 BILLION** in estimated increased earnings over their working lives.
- This translates to a return of **\$3.10** in higher future income for every \$1 that students invest in their UNC-CH education. The average annual return for students is **14.3%**.

### Societal perspective

- North Carolina as a whole will receive a present value of **\$13.8 BILLION** in added state income over the course of the students' working lives. Communities will also benefit from **\$1.8 BILLION** in present value social savings related to reduced crime, lower unemployment, and increased health and well-being across the state.
- For every dollar that society spent on educations at UNC-CH during the analysis year, North Carolina communities will receive a cumulative value of **\$4.70** in benefits, for as long as the 2012-13 students of UNC-CH remain active in the state workforce.

### Taxpayer perspective

- In FY 2012-13, state taxpayers in North Carolina invested **\$796.3 MILLION** to support the operations of UNC-CH. The net present value of the added tax revenue stemming from the students' higher lifetime incomes and the increased output of businesses amounts to **\$1.3 BILLION** in benefits to taxpayers. Savings to the public sector add another **\$317.8 MILLION** in benefits due to a reduced demand for government-funded services in North Carolina.
- Dividing benefits to taxpayers by the associated costs yields a **2.1** benefit-cost ratio, i.e., every \$1 in costs returns \$2.10 in benefits. The average annual return on investment for taxpayers is **6.7%**.

# FACT SHEET

## Economic Impacts of the University of North Carolina Hospitals and Faculty Physicians

OCTOBER 2014

*The University of North Carolina Health Care System is an integrated health care system that exists to further the teaching mission of the University of North Carolina and to provide state-of-the-art patient care. In FY 2012-13, UNC Hospitals had 805 beds, nearly 1.4 million clinical visits, and served over 37,000 North Carolina residents.*

*In this analysis we estimate the spending impacts of the UNC Hospitals and Faculty Physicians. Throughout the remainder of this document, we will refer to UNC Hospitals and Faculty Physicians as UNC Medical. The broader health-related impacts of the services provided through these operations are not considered.*

In FY 2012-13, UNC Medical collectively spent over **\$1.5 BILLION** on clinical and hospital operations. This spending creates additional income and jobs for people beyond UNC Medical as it ripples throughout the North Carolina economy. Through the purchase of goods and services, UNC Medical supports other local businesses. Over **\$938 MILLION** was paid to employees that live in North Carolina in the form of salaries, wages, and benefits. These people are also consumers of goods and services. When they use a portion of their earnings to patronize North Carolina businesses, another round of spending is sent through the state economy.

The first round of UNC Medical spending creates a direct effect of **\$266 MILLION** through its supply chain. The supply chains of those businesses create the indirect effect of **\$63 MILLION**. When the employees of all of those businesses and UNC Medical consume their earnings, they create an induced effect of nearly **\$731 MILLION**. In FY 2012-13, the total spending impact of UNC Medical in North Carolina was **\$2 BILLION**, or the equivalent of **24,108 JOBS**.

### UNC MEDICAL SPENDING IMPACT ON NORTH CAROLINA ECONOMY

	LABOR INCOME*	NON- LABOR INCOME*	VALUE ADDED*	JOBS
Initial Effect	\$938,688	\$0	\$938,688	9,368
Multiplier Effect				
Direct Effect	\$136,135	\$130,338	\$266,473	3,493
Indirect Effect	\$34,770	\$28,514	\$63,284	847
Induced Effect	\$371,320	\$359,316	\$730,636	10,130
Subtotal	\$542,225	\$518,169	\$1,060,394	14,470
<b>TOTAL EFFECT</b>	<b>\$1,480,913</b>	<b>\$518,169</b>	<b>\$1,999,082</b>	<b>24,108</b>

\*Listed in thousands.



**150+**  
Startups

**8,000**  
Jobs Created

**\$7 Billion**  
Annual Revenue



At Carolina, the research, discoveries, and creative activity of our faculty and students translate into new businesses and jobs. Today there are over 150 UNC-CH startup companies located in North Carolina that provide jobs to nearly 8,000 state residents.



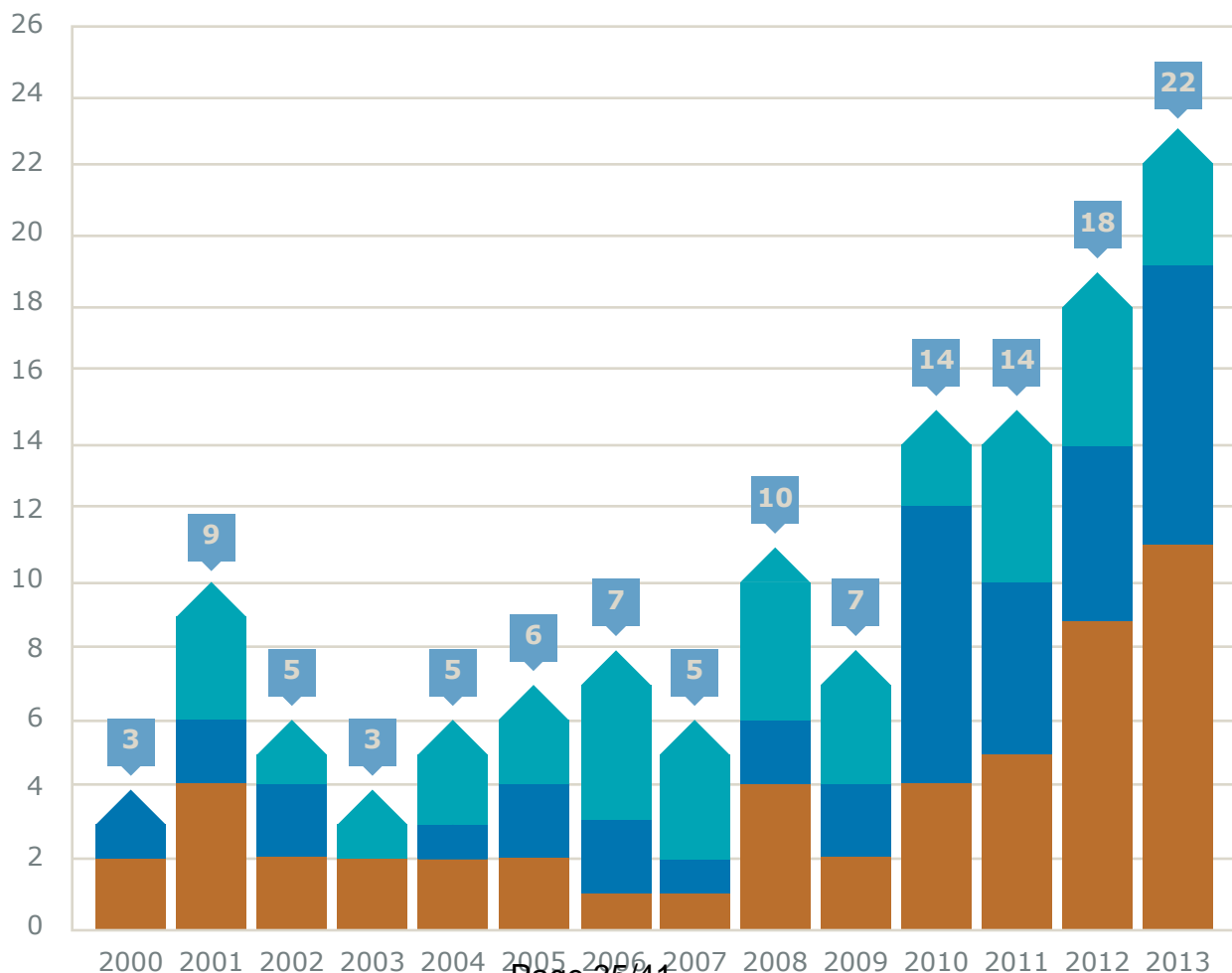
A major force in the state's economy, UNC-Chapel Hill drives economic prosperity by attracting the best and brightest minds to North Carolina and providing an environment that inspires creativity and discovery.

Carolina invests heavily to create a culture of entrepreneurship and a support network on campus that propels research and innovation into viable startup businesses.

Today there are more than 150 UNC-CH startup companies located in North Carolina that provide jobs to nearly 8,000 state residents. These companies employ 38,000 worldwide and bring more than \$7 billion in revenue back to North Carolina each year.

## UNC NC Startups Per Year from 2000 - 2013

🏠 Technology-Transfer   🟢 Independently Launched   🟠 UNC-Assisted   🟡 Total Launched



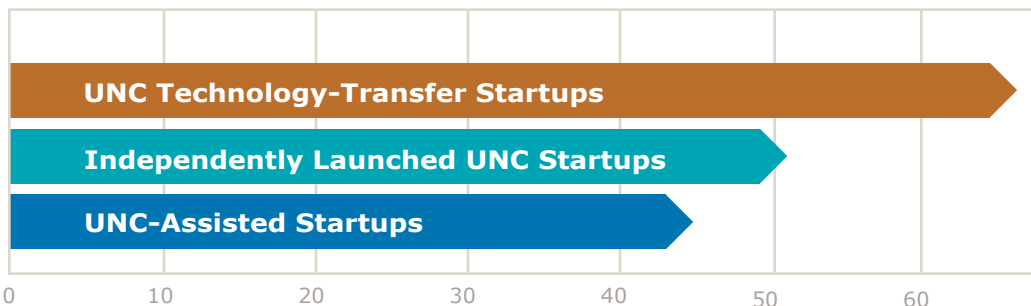


## Total UNC NC Startups by Category from 1970 - 2013

Technology-Transfer

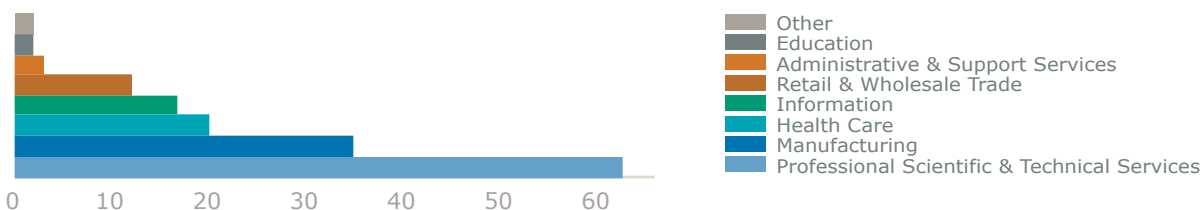
Independently Launched

UNC-Assisted



- UNC's 150+ startups employ nearly 8,000 people in North Carolina
- 35 companies manufacturing products in North Carolina
- Nearly one-half of UNC startups employ 5 or more people
- 9 major employers providing clinical-trials services
- 20% of UNC startups employ 15 or more people
- The average revenue of UNC's technology-transfer startups reporting profits is \$5 million
- 17 information and technology companies, including 8 software developers
- 1/3 of UNC startups are in the biotechnology industry, where median salaries are twice the average annual pay in North Carolina
- The average volume of venture capital received by UNC technology-transfer startups that report their financing is \$15 million

## Industry Breakdown



## UNC Tech Transfer Stats At A Glance *(Office of Technology Development, FY2014)*

Total Number of Invention Disclosures	156
Number of U.S. Patents Filed (includes Provisional)	142
Number of U.S. Patents Issued	34
Number of Licenses Granted	36
Number of Options Granted	0
Number of Companies Started	10
License Revenue Received	\$7.9 million
Patent Reimbursement	\$3.5 million
Total Expenditure on Patents	\$3.2 million

*Stats subject to change until reported to AUTM in June 2015.*



## Independently Launched UNC Startups

AgBiome, LLC  
Allotropica Technologies, Inc.  
Arcato Laboratories, Inc.  
AuthentiForm Technologies, LLC  
BiddRocket, Inc.  
BioFluidica, LLC  
Bronto Software, Inc.  
Cameron Technology Solutions, Inc.  
Carbon3D, Inc.  
CertiRx, Inc.  
Chaperone Therapeutics, Inc.  
Chatham Therapeutics, LLC  
Cirrus Pharmaceuticals, Inc.  
Clinipace, Inc.  
CMP Pharma, Inc.

Community Nutrition Partnership, Inc.  
Conatus Consulting, LLC  
Effipharma  
Empiric Systems, LLC  
FHI 360, Inc.  
Flexcell International Corporation, Inc.  
Health Decisions, Inc.  
iContact, LLC  
ImmunoBenefit, LLC  
IntraHealth International, Inc.  
Ipas, Inc.  
Kryosphere, Inc.  
LQ3 Pharmaceuticals, Inc.  
Lung Banks of America, Inc.  
Magnus Health Technology, Inc.

MathTensor, Inc.  
National College Advising Corps, Inc.  
Navitas Research, LLC  
NC Fisher Research, LLC  
Ndimo, Inc.  
Premitec, Inc.  
Progressive Computer Systems, Inc.  
Protodia, Inc.  
Quintiles Transnational Holdings, Inc.  
Rho, Inc.  
RTI International, Inc.  
RxAnalytics, Inc.  
Stone Timber River, LLC  
Threads of HOPE NC, Inc.



## UNC Technology-Transfer Startups

Algynomics, Inc.  
AlphaVax, LLC  
Altometrics, Inc.  
AngleFix Tech, LLC  
Applied Micro Products, Inc.  
Aquagenx, LLC  
Asklepios BioPharmaceutical, Inc.  
Attagene, Inc.  
BioDeptronix, LLC  
Bivarus, LLC  
Cell Microsystems, Inc.  
ChemoGLO, LLC  
Clave BioDesign, Inc.  
Clinical Sensors, Inc.  
CMP Tarnhelm Therapeutics, LLC  
Combs Lab, Inc.  
Cortical Metrics, LLC  
Counter Tools, Inc.  
Couragen Biopharmaceutics, LLC  
deltaSphere, Inc.  
Dyzen, Inc.  
ENCI Therapeutics, Inc.

Entegriion, Inc.  
Epiccypher, Inc.  
G-1 Therapeutics, Inc.  
GeneCentric Diagnostics, Inc.  
Global Vaccines, Inc.  
Glycan Therapeutics, LLC  
HealthSpan Dx, LLC  
Hiball Tracker, Inc.  
Impulsonic, Inc.  
InnerOptic Technology, Inc.  
Inspire Pharmaceuticals  
Invitrox, Inc.  
Katharos, Inc.  
KindHeart, Inc.  
KinoDyn, Inc.  
KXTbio, Inc.  
Liquidia, Inc.  
Meryx, Inc.  
Micell Technologies, Inc.  
NanoCor Therapeutics, Inc.  
NeuroGate Therapeutics, Inc.  
New Paradigm Therapeutics, Inc.

NextRay, Inc.  
Novametrics, Inc.  
Novan, Inc.  
NovoLipid, Inc.  
Oriol Therapeutics, Inc.  
Parion Sciences, Inc.  
Pharmatrophix, Inc.  
Qualiber, Inc.  
Qualyst Transporter Solutions, LLC  
Realtromins, Inc.  
Repairion, Inc.  
Rheomics, Inc.  
SonoVol, LLC  
Spyryx, LLC  
Symberix, LLC  
Syzygy Optics, LLC  
Targeted Reading Intervention, Inc.  
TheraLogics, Inc.  
Vascular Pharmaceuticals, Inc.  
Viamet Pharmaceuticals, Inc.  
XinRay Systems,  
Xintek, Inc. LLC



## UNC-Assisted Startups

Acris Pharmaceuticals, LLC  
ArteSanar, Inc.  
Augment Medical, Inc.  
Bella Monica, Inc.  
BlackInkMetrics, LLC  
Blinkness, Inc.  
Buzz Rides Enterprises, LLC  
Carolina for Kibera, Inc.  
The Community Empowerment Fund, Inc.  
Contactology, Inc.  
Datacraft Solutions, Inc.  
Enzerna Biosciences, LLC  
Everyday Glucose, LLC  
Firsthand Foods, LLC  
Gift Boogle, Inc.

GiftOasis, LLC  
Healthy Girls Save the World, Inc.  
HOPE Gardens, Inc.  
HopeCare, Inc.  
Imagine Optix, Inc.  
Keona Health, Inc.  
KL Medical, LLC  
Level Logic, Inc.  
LoneRider Brewing, Inc.  
LotusBioEFx, LLC  
Musical Empowerment, Inc.  
New Mind Education, LLC  
Nourish International, Inc.  
Novocor  
RemedEase, Inc.

RentalTaxTool, LLC  
Ribometrix, LLC  
Sanitation Creations, LLC  
Simply B Gluten Free, LLC  
Size Me Up, Inc.  
Spectraforce Technologies  
Spirovention, Inc.  
Sqord, Inc.  
TerraHub, LLC  
UltraLinq Healthcare Solutions, Inc.  
Veosport, LLC  
Windsor Circle, Inc.  
WorkSmart, Inc.  
X-In 8 Biologicals  
YardSprout, LLC



Independently Launched UNC Startups are new businesses created by faculty and students that arise directly from their work and experience at Carolina.



UNC Technology Transfer Startups are businesses created by UNC faculty that license intellectual property created from their scientific discoveries and research.



UNC-Assisted Startups are businesses created by UNC faculty, staff, and students that received direct institutional support through UNC business-plan competitions, entrepreneurship programs and courses, hands-on business mentoring, and incubators for startup ventures.



# 2014 INNOVATORS REPORT

TRACKING NORTH CAROLINA'S ENTREPRENEURIAL ACTIVITY

## FUNDING

331 INVESTMENTS • 226 NC COMPANIES

TECH  
\$277,769,748

LIFE SCIENCE  
\$252,666,695

\$622,383,469

ADVANCED MANUFACTURING  
& MATERIALS  
\$81,082,251

CLEANTECH  
\$10,864,775

### 2014 TO 2013 COMPARISONS:

#### Total funding:

2014 \$622,383,469  
2013 \$461,240,692

#### Equity:

2014 \$532,641,991  
2013 \$429,080,217

#### Grants & Awards:

2014 \$89,802,004  
2013 \$31,935,475

#### Investments:

2014 331 INVESTMENTS  
2013 260 INVESTMENTS

#### Tech funding (including CleanTech):

2014 \$288,634,523  
2013 \$116,873,094

#### Life Sciences:

2014 \$252,666,695  
2013 \$275,486,045

#### Advanced Manufacturing & Materials:

2014 \$81,082,251  
2013 \$68,709,235

#### Companies (receiving investment):

2014 226 COMPANIES  
2013 223 COMPANIES

# EQUITY DEALS

TOTAL # OF EQUITY DEALS

# 174

COMPANIES RECEIVING DEALS

SECTOR

TECH

LIFE SCIENCE

ADV. MANUFACTURING &amp; MATERIALS

CLEANTECH

83

35

4

13

Q1

Q2

Q3

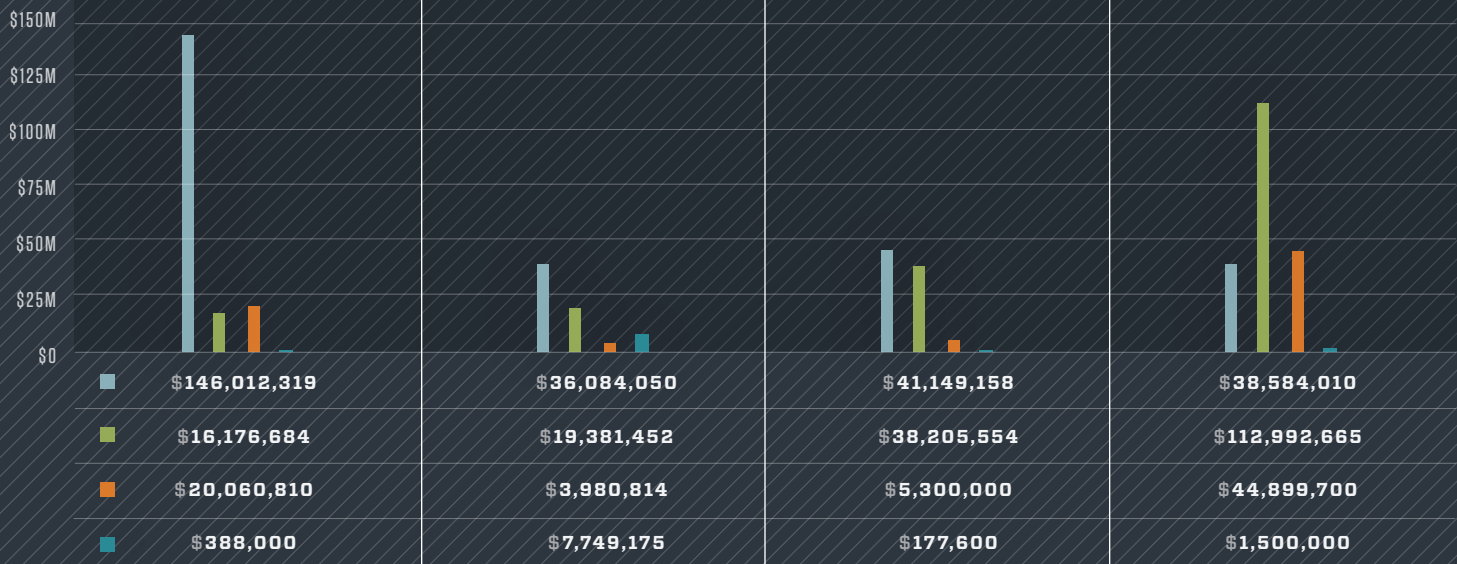
Q4

DEALS **43**  
 COMPANIES: **41**  
 TOTALS: **\$182,637,813**

DEALS **41**  
 COMPANIES: **39**  
 TOTALS: **\$67,195,491**

DEALS **43**  
 COMPANIES: **40**  
 TOTALS: **\$84,832,312**

DEALS **47**  
 COMPANIES: **44**  
 TOTALS: **\$197,976,375**



DEALS BY SIZE:

≤ \$999,999

\$1M - \$4.999M

\$5M - \$14.999M

\$15M - \$60M

≥ \$100M

106

43

21

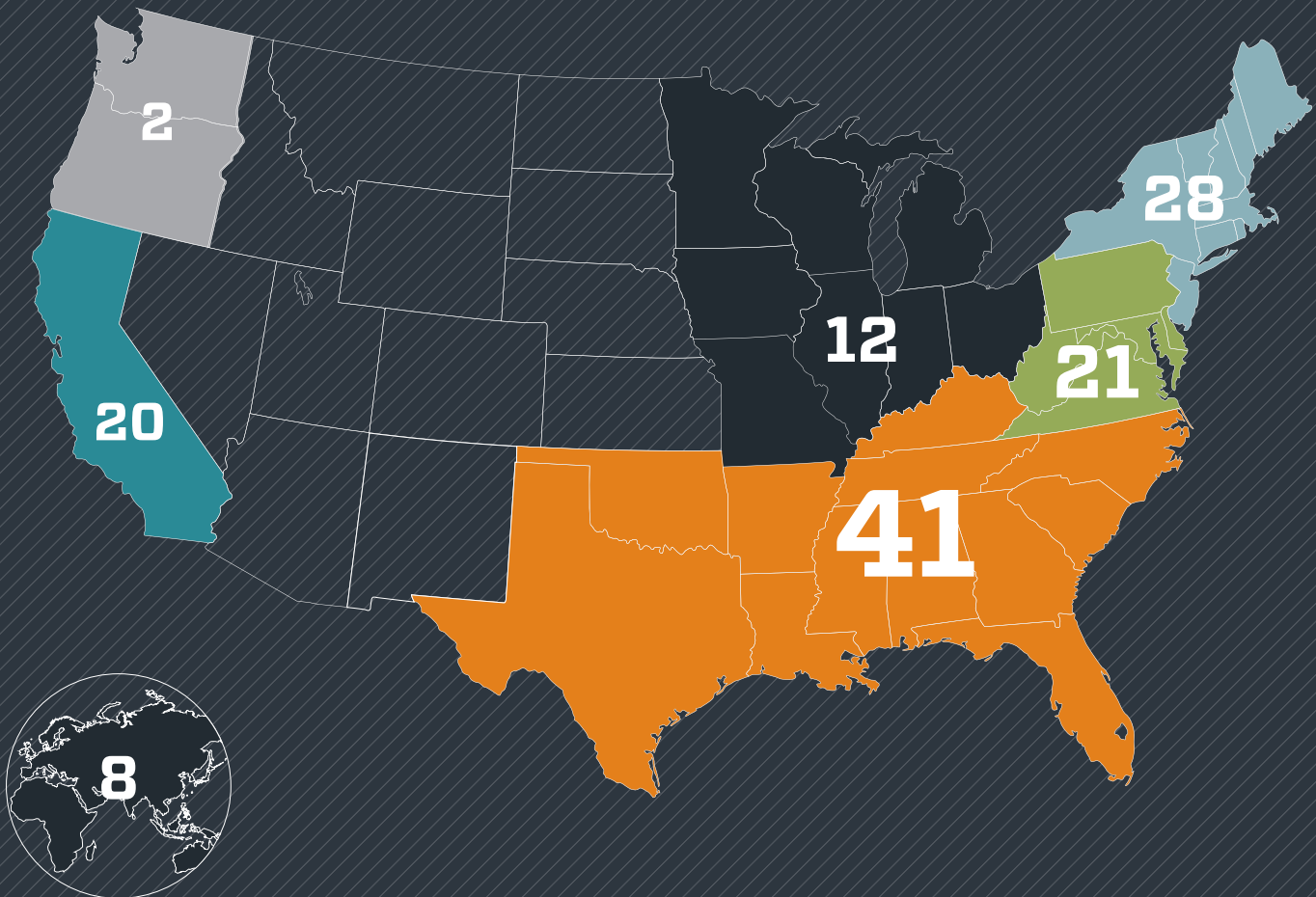
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1



# INVESTORS

132 UNIQUE INSTITUTIONAL FUNDERS ↑23%



## REGIONAL AND STATE BREAKDOWN 2014:

### SOUTHEAST

NC - 32  
AL - 3  
SC - 2  
TX - 2  
TN - 1  
FL - 1

### MID-ATLANTIC

DC - 8  
MD - 6  
VA - 5  
PA - 2

### INTERNATIONAL

8 - (UK, IRELAND, CHINA, FRANCE, GERMANY, BELGIUM)

### NORTHEAST

NY - 16  
MA - 7  
CT - 3  
NJ - 2

### MIDWEST

IL - 5  
MD - 4  
IN - 2  
KS - 1

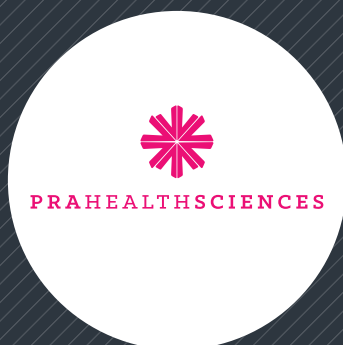
### NORTHWEST

NY - 1  
MA - 1  
**CALIFORNIA**  
CA - 20



# EXITS

## 6 IPOs



## 59 Acquisitions in 2014

### HIGHLIGHTS:

● FURIEX PHARMACEUTICALS	FOREST LABORATORIES	\$1,500,000,000
● CHELSEA THERAPEUTICS	LUNDBECK	\$658,000,000
● SOLSTAS LAB PARTNERS GROUP, LLC	QUEST DIAGNOSTICS	\$570,000,000
● RELIAS LEARNING	BERTELSMANN	\$540,000,000
● AERIAL BIOPHARMA	JAZZ PHARMACEUTICALS	\$397,000,000
● DIGITALSMITHS	TIVO	\$135,000,000
● APPIA	MANDALAY DIGITAL	\$100,000,000
● STRIKEIRON	INFORMATICA	\$55,000,000