



**Academic Affairs Committee  
October 29, 2024**

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**Information Item**

AAC – 3      Update on Research and Engagement

The UNCG Office of Research and Engagement provides strategic direction and guided support to faculty, staff and students for research and creative endeavors resulting in funded grants, innovation, and community engagement leading to knowledge, student, regional transformation and economic prosperity.

**External Funding and Trends**

The first quarter of the FY25 academic year has seen a strong increase in the dollar amount of submissions relative to FY24 at the same time last year. In the last three months we have had 107 submissions in the amount of \$57,689,080.39, relative to \$39,191,001 last year. This is an increase of 47% relative to the previous year at the same time.

Awards during the first quarter are \$19,862,082.96. Last year, awards were \$27,141,071.65 during the first quarter. This decrease is a reflection of last year’s decrease in submissions as well as a delay in funding commitments by a few agencies. Strategies are underway to monitor

	<b>7-1-24 to 9-30-24</b>		<b>7-1-23 to 9-30-23</b>	
<b>SUBMISSIONS</b>	Number	Amount	Number	Amount
	107	\$ 57,698,080	108	\$ 39,191,001
<b>AWARDS</b>	Number	Amount	Number	Amount
	86	\$ 19,862,083	102	\$ 27,141,072

**Overall Research Impact Indicator**

On September 16, 2024, the publisher, Elsevier, published their ‘[Updated science-wide author databases of standardized citation indicators](#)’. The publication provides a database of top-cited scientists determined through standardized information on citations and other criteria. Our list showcases more than 35 UNCG faculty for their accomplishments and impact to their fields.

**Funding Award for Transformation in Educational Research**

Dr. Priscilla Maynor received an award in the amount of \$11,314,749 from the *US Department of Education* for a project titled "*Region 5 Comprehensive Center*". This grant allows the SERVE Center at the University of North Carolina at Greensboro to operate the Region 5 Comprehensive Center (RC5) and provide intensive, capacity-building services to Georgia, North Carolina, and South Carolina.

This work aims to support improving effectiveness in carrying out consolidated state plans; cultivating literacy, math, and multi-tiered system of support initiatives; building capacity to address emerging needs such as the educator shortage; scaling up promising practices by engaging school leaders; and focusing on support to other federal assistance providers by disseminating their products and services. The expected outcomes are to build the human, organizational, policy, and resource capacities.

### **Funding Award Supporting Community Engagement to Address Housing Challenges**

Renée Norris in the Center for Housing and Community Studies (CHCS) received an award from Guilford County in the amount of \$1,109,517 for a project titled “*Tenant Education Advocacy Mediation.*” CHCS will collaborate with Legal Aid of North Carolina, the City of Greensboro, and Guilford County, to launch a courthouse-based program in Greensboro to provide legal information, mediation services, and assistance to offer services to both landlords and tenants right outside Small Claims eviction court.

### **National Science Foundation Award to Impact Ecological Research**

Dr. Bryan McLean in the Department of Biology received an award from the National Science Foundation Division of Biological Science in the amount of \$802,097 titled “*Collaborative Research: Ranges: Building Capacity to Extend Mammal Specimens from Western North America*”. Western North America has been a region of high temperate mammal diversity for millions of years. This diversity, combined with substantial topographic complexity, a dynamic climate, and a rich and informative fossil record, make the region a natural laboratory for studying speciation, phenotypic diversification, biogeography, and community assembly over deep and shallow timescales. The grant will allow the digitization of U.S. vertebrate collections and taxonomic information from mammal specimens, for understanding past and future responses to global change.

### **Building Research Infrastructure through funding from the Department of Defense**

Dr. Hemali Rathnayake received an award in the amount of \$800,000 from the United States Department of Defense (DOD) for a project titled ‘*Acquisition of a 3D Super-Resolution Live Cell Imaging Microscope for Interdisciplinary Graduate Research and Educational Training*’. The funding will allow the purchase and installation of a state-of-the-art microscope that provides unique capabilities of lattice dual iterative structured illumination microscopy and single molecule localization microscopy to offer super-resolution digital imaging capability at nanometer scale, resolving sub-organelle structures down to the lateral resolution of 20 to 30 nm. The ability to observe organelle, sub-organelle structures, and self-assembled abiotic-biotic hybrid systems of microbes and fluorescent colloids, nanomaterials, and molecular clusters, in real time with precision, makes possible to: (1) study fine structures of live cells and cytoskeletons, (2) understand biological processes in 2D and 3D, and (3) discover and engineer biotic-abiotic hybrid systems.

Attachment: Presentation Slides



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Interim Provost & Executive  
Vice Chancellor

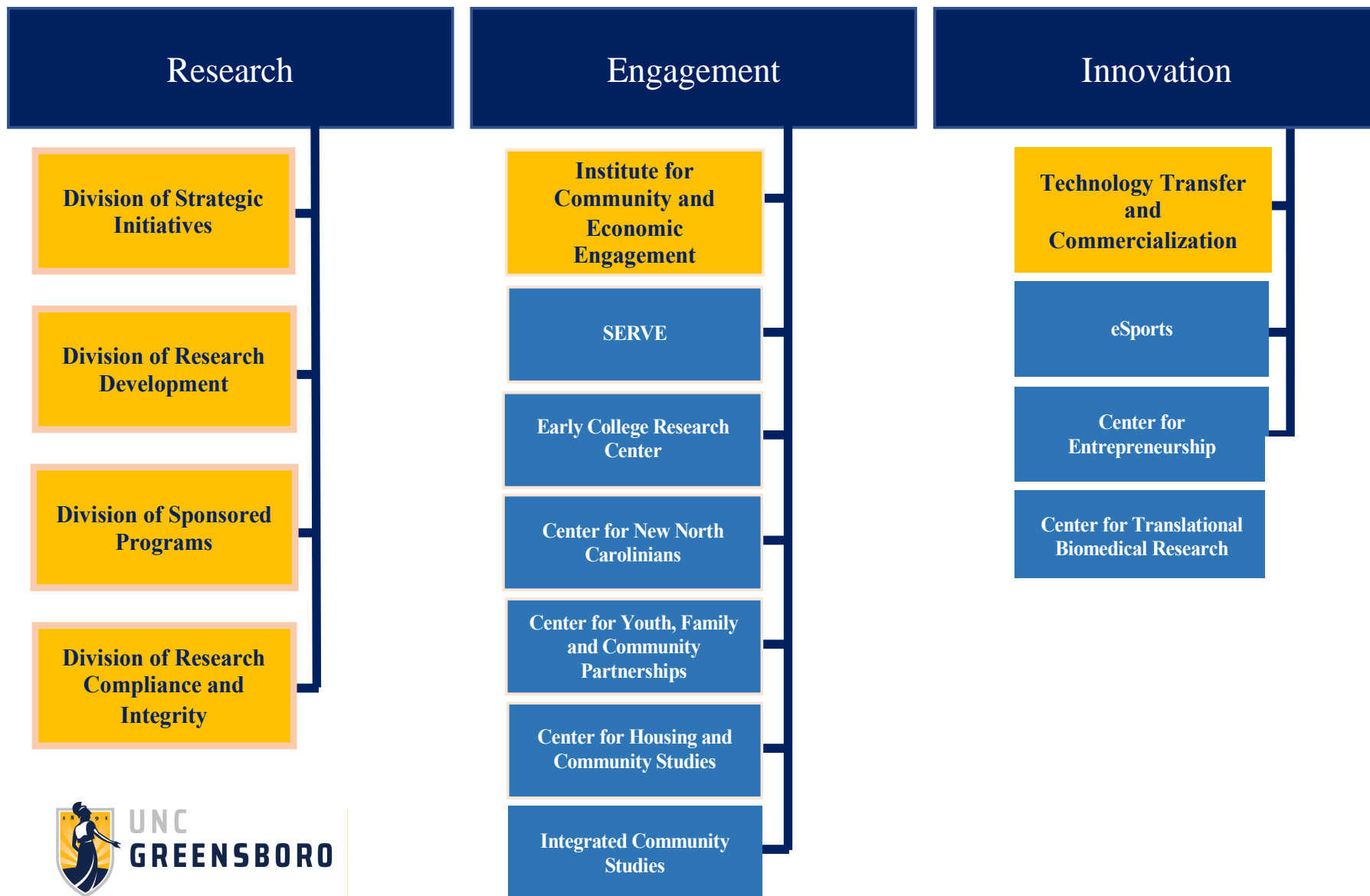


UNC  
**GREENSBORO**

Office of  
Research and  
Engagement

**Board of Trustees Meeting  
October 29, 2024**

# OFFICE OF RESEARCH AND ENGAGEMENT



# Recent Awards and Highlights

## **Region 5 Comprehensive Center:**

\$11.3 M Award funded by the U.S. Department of Education

*Awardee: Dr. Priscilla Maynor*

*SERVE Center*



## **Recipe for Success**

\$1.16 M Award funded by the North Carolina

Department of Health and Human Services

*Awardees: Dr. Arthur Murphy, Dr. Jennifer Hill and*

*Dr. Stephanie Friede*

*Center for Youth, Family and Community Partnerships*



NC DEPARTMENT OF  
HEALTH AND HUMAN SERVICES

## **Tenant Education Advocacy Mediation**

\$1.1 M Award funded by Guilford County

Awardee: Renee Norris

Center for Housing and Community Studies



**Table I. Federal Research and Development Funding by Agency, FY2022-FY2024**

(budget authority, dollar amounts in millions)

Department/Agency	FY2022 Actual	FY2023 Estimate	FY2024 Request	FY2023-FY2024	
				Dollar Change	Percentage Change
Department of Defense	78,642	92,854	95,986	3,132	3.4%
Dept. of Health and Human Services	45,318	48,118	50,896	2,778	5.8%
Department of Energy	22,562	23,218	24,220	1,002	4.3%
NASA	12,479	13,105	14,022	917	7.0%
National Science Foundation	7,126	7,992	9,320	1,328	16.6%
Department of Commerce	7,214	5,114	4,388	-726	-14.2%
Department of Agriculture	3,748	3,615	3,670	55	1.5%
Department of Veterans Affairs	1,588	1,624	1,690	66	4.1%
Department of Transportation	1,675	1,388	1,531	143	10.3%
Department of the Interior	1,140	1,264	1,478	214	16.9%
Department of Homeland Security	830	634	625	-9	-1.4%
Environmental Protection Agency	527	568	614	46	8.1%
Smithsonian Institution	330	341	364	23	6.7%
Department of Education	390	349	330	-19	-5.4%
Other	554	626	589	-37	-5.9%
<b>Total</b>	<b>184,123</b>	<b>200,810</b>	<b>209,723</b>	<b>8,913</b>	<b>4.4%</b>

# Our Carnegie Classification as a Research University

<b>New Classification</b>	<b>Expenditures Required to Meet Criteria</b>	<b>Number of PhD Graduates Required to meet Criteria</b>
R1 “Very High Research Spending and Doctorate Production”	\$50 M	70
R2 “High Research Spending and Doctorate Production”	\$5 M	20
Research Colleges and Universities	\$2.5 M	0

# UNCG's Ranking Based on R&D by all Expenditures

Ranking	UNC System Institution	Expenditures (\$ in thousands )
12	UNC Chapel Hill	\$ 1,361,028,000.00
55	North Carolina State U.	\$ 583,203,000.00
202	East Carolina U.	\$ 55,693,000.00
216	North Carolina A&T State U.	\$ 47,908,000.00
226	UNC Charlotte	\$ 43,126,000.00
229	UNC Greensboro	\$ 41,303,000.00
290	UNC Wilmington	\$ 20,053,000.00
312	North Carolina Central U.	\$ 16,600,000.00
382	Appalachian State U.	\$ 7,189,000.00
409	UNC Asheville	\$ 5,973,000.00
493	Fayetteville State U.	\$ 3,206,000.00
512	Western Carolina U.	\$ 2,783,000.00
564	Elizabeth City State U.	\$ 1,934,000.00

*National Center for Science and Engineering Statistics,  
Higher Education Research and Development Survey, FY 2022.*

# UNCG's Ranking Based on R&D expenditures, financed by the Department of Health and Human Services

Ranking	UNC System Institution	Expenditures (\$ <i>in thousands</i> )
9	UNC Chapel Hill	\$ 659,640,000.00
108	North Carolina State U.	\$ 51,694,000.00
156	East Carolina University	\$ 17,064,000.00
177	UNC Greensboro	\$ 12,098,000.00
217	North Carolina Central U.	\$ 7,334,000.00
225	UNC Charlotte	\$ 6,425,000.00
236	Winston Salem State U.	\$ 5,008,000.00
253	NC A&T State U.	\$ 3,833,000.00
318	UNC Asheville	\$ 1,398,000.00
362	Western Carolina U.	\$ 838,000.00
383	UNC Wilmington	\$ 648,000.00
405	Fayetteville State U.	\$ 535,000.00
467	Appalachian State U.	\$ 467,000.00
486	Elizabeth City State U.	\$ 486,000.00

*National Center for Science and Engineering Statistics,  
Higher Education Research and Development Survey, FY 2022.*

# UNCG's Ranking Based on R&D expenditures, financed by the Other Federal Agencies

Ranking	UNC System Institution	Expenditures (\$ in thousands )
4	UNC Chapel Hill	\$ 80,517,000.00
34	North Carolina State U.	\$ 28,623,000.00
89	UNC Greensboro	\$ 11,999,000.00
174	UNC Wilmington	\$ 3,841,000.00
176	East Carolina U.	\$ 3,771,000.00
183	UNC Charlotte	\$ 3,487,000.00
203	NC A&T State U.	\$ 2,831,000.00
213	Winston Salem State U.	\$ 2,548,000.00
270	North Carolina Central U.	\$ 1,076,000.00
325	UNC Asheville	\$ 594,000.00
360	Western Carolina U.	\$ 407,000.00
375	Appalachian State U.	\$ 348,000.00
394	Elizabeth City State U.	\$ 295,000.00

*National Center for Science and Engineering Statistics,  
Higher Education Research and Development Survey, FY 2022.*

# UNCG's Ranking Based on R&D expenditures, financed by the Department of Defense

Ranking	UNC System Institution	Expenditures (\$ <i>in thousands</i> )
55	North Carolina State U.	\$ 32,063,000.00
66	UNC Chapel Hill	\$ 26,622,000.00
209	UNC Charlotte	\$ 2,607,000.00
226	North Carolina A&T State U.	\$ 2,170,000.00
257	North Carolina Central U.	\$ 1,188,000.00
299	UNC Greensboro	\$ 597,000.00
322	UNC Wilmington	\$ 393,000.00
375	Appalachian State U.	\$ 151,000.00

*National Center for Science and Engineering Statistics,  
Higher Education Research and Development Survey, FY 2022.*

# UNCG's Ranking Based on R&D expenditures, financed by the Department of Energy

Ranking	UNC System Institution	Expenditures (\$ <i>in thousands</i> )
23	North Carolina State U.	\$ 28,484,000.00
54	UNC Chapel Hill	\$ 13,674,000.00
129	UNC Charlotte	\$ 3,330,000.00
162	North Carolina A&T State U.	\$ 1,557,000.00
181	North Carolina Central U.	\$ 1,116,000.00
203	East Carolina U.	\$ 737,000.00
333	UNC Greensboro	\$ 39,000.00
366	UNC Wilmington	\$ 7,000.00
376	Appalachian State U.	\$ 2,000.00

*National Center for Science and Engineering Statistics,  
Higher Education Research and Development Survey, FY 2022.*

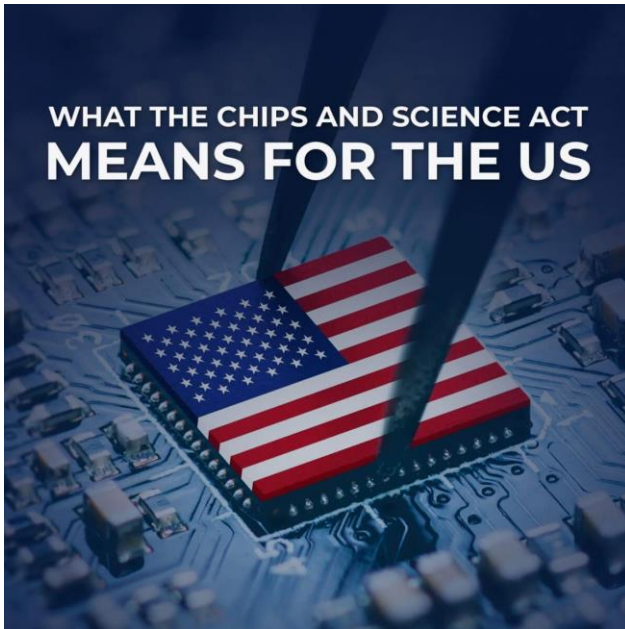
# Agencies with Increasing R&D Funding Opportunities



U.S. Department of  
**Health and Human Services**

Enhancing the health and well-being of all Americans

WHAT THE CHIPS AND SCIENCE ACT  
MEANS FOR THE US



U.S. DEPARTMENT OF  
**ENERGY**



U.S. Department of Defense



**NIST**

National Institute of  
**Standards and Technology**

U.S. Department of Commerce

# Economic Development Partnership of North Carolina Report



## NORTH CAROLINA: LEADING THE CHARGE TO A CLEAN ENERGY FUTURE

As the costs of fossil fuels rise to the highest levels in decades, businesses are seeking cost effective and sustainable energy solutions. Without adequate sources of clean energy, however, jurisdictions around the world are reverting to redeploying coal to fuel energy demands, even with a strong aversion to coal because of its polluting effects and significant contribution to climate change. The economic and environmental repercussions of climate change are vast. They include devastating disruptions worldwide in the form of more frequent, severe and costly natural disasters, loss of biodiversity, food and water insecurity and violent conflict.

North Carolina leads the United States in taking bold steps to address climate change and rising energy costs. Over the last two decades, the state has enacted a series of legislative, executive and regulatory actions to propel the state toward a clean energy future. These actions laid the foundation for landmark bipartisan climate legislation passed in 2021 known as House Bill 951 (HB 951) which requires North Carolina utilities to reach carbon neutrality by 2050. Simultaneously, North Carolina has invested heavily in diversifying its energy resource mix to include increased amounts of renewable energy sources. These investments have enabled North Carolina businesses to meet their sustainability goals while benefiting from some of the lowest energy costs in the country.

North Carolina's actions on clean energy have paid off and set the state apart from the rest of the Southeast. According to a 2022 [SmartAsset study](#), North Carolina ranks first nationally for renewable energy leadership. In 2022, [Site Selection magazine](#) ranked North Carolina first in the South Atlantic United States and seventh in the nation for sustainability. According to the [North Carolina Greenhouse Gas Inventory](#), North Carolina reduced CO2 fossil fuel emissions by 20% between 2005 and 2018, far outpacing a reduction of 12% nationally. This progress positions the state as the center of the country's emerging clean energy economy and as an ideal location for businesses committed to sustainability.

### #1

STATE FOR  
RENEWABLE  
ENERGY  
LEADERSHIP<sup>1</sup>

### #1

STATE FOR  
SUSTAINABILITY  
IN SOUTH  
ATLANTIC<sup>2</sup>

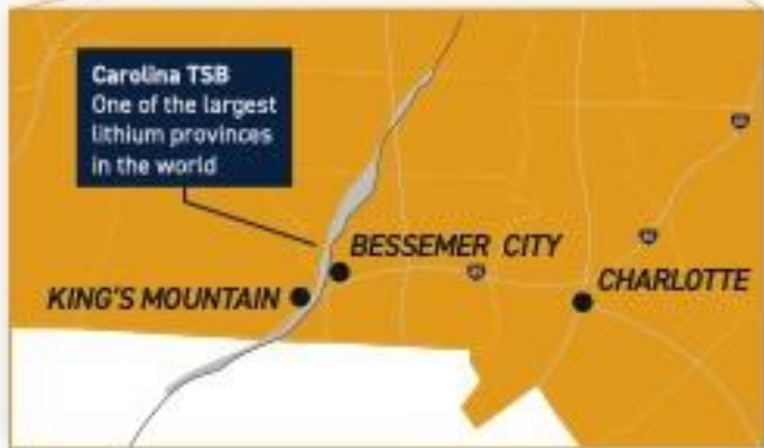
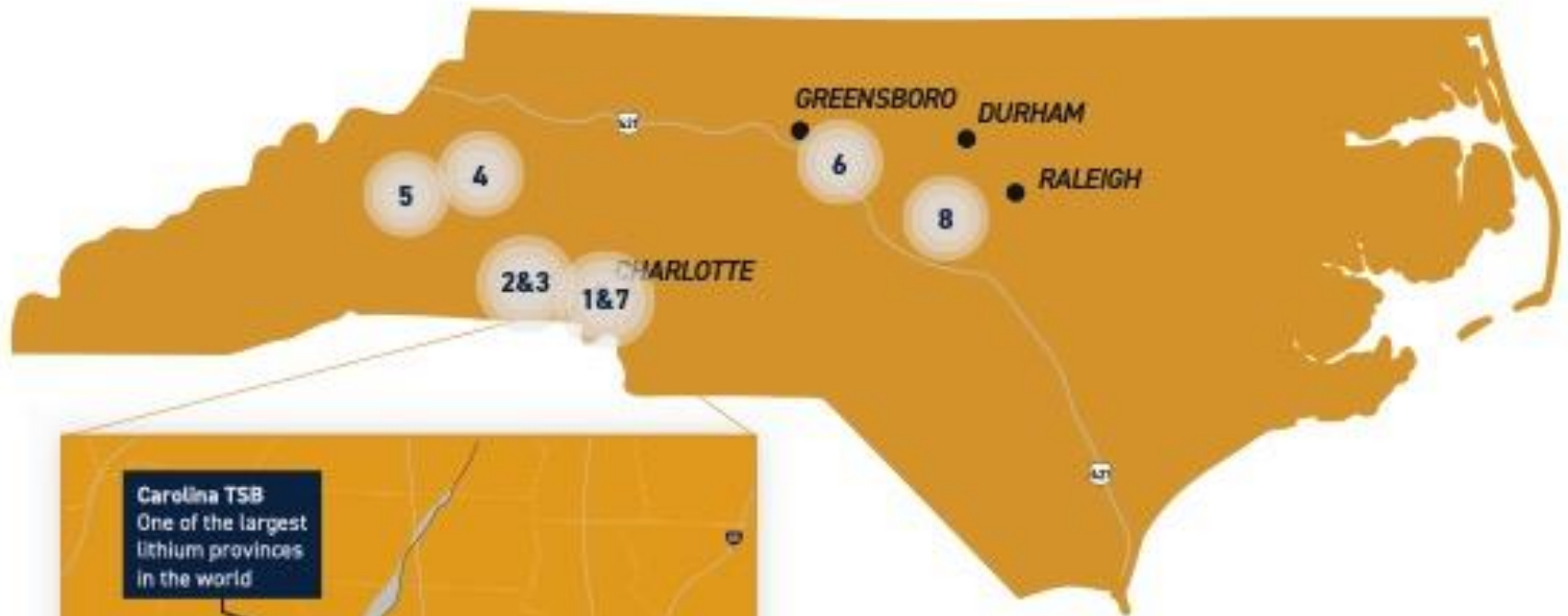
### 20%

REDUCTION OF  
CO2 FOSSIL FUEL  
EMISSIONS (2005  
- 2018)<sup>3</sup>

1. SmartAsset, 2022
2. Site Selection magazine, 2022
3. North Carolina Greenhouse Gas Inventory, 2022

# A CONSOLIDATED EV SUPPLY CHAIN

North Carolina is a top choice for the consolidation of the electric vehicle supply chain.



### Raw Material Supplier

- 1. Piedmont Lithium
- 2. Livent
- 3. Albemarle
- 4. SGL Carbon

### Battery Manufacturer

- 6. Toyota

### Battery and EV Manufacturer

- 7. Arrival
- 8. VinFast

### EV Manufacturer

- 5. Forza X1



**SELECTING THE [NORTH CAROLINA] SITE FOR OVERTURE MANUFACTURING IS A SIGNIFICANT STEP FORWARD IN BRINGING SUSTAINABLE SUPERSONIC AIR TRAVEL TO PASSENGERS AND AIRLINES.**

**Blake Scholl,**  
*Founder and CEO of Boom Supersonic*

*Photo Credit: Boom Supersonic*

# A Growing Economy Seeking Talent for Upcoming Jobs

## Opportunities ahead:

- Establishment of **Institutes of Innovation** to build Research Capacity at UNCG
- Broadening **student participation** in critical emerging areas of research and scholarship
- Equipping all our students with **skills** necessary to succeed in emerging industries
- Increasing **external funding** and **research/scholarship** in emerging areas
- Engaging **faculty** in research and curriculum development for courses
- **Partnerships** with community and national organizations
- **Research Leadership Academy** to Support growth in these areas



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Thank you