



SC COUNCIL ON COMPETITIVENESS



We Advance South Carolina

Presentation to SC Association of Counties:
Counties Connect

February 21, 2024



SC COUNCIL ON COMPETITIVENESS

The South Carolina Council on Competitiveness - **“SC Competes”** - is a nonpartisan, business-led, nonprofit organization that drives South Carolina’s long-term economic growth by managing the state’s industry CLUSTERS and providing the research, network, and resources that industry clusters require to thrive.

How SC Competes Advances South Carolina

Our Work is Accomplished in 3 Primary Ways:

Industry Clusters...Niche Areas

Aerospace

Logistics

Technology/Cybersecurity

Advanced energy

Artificial intelligence

Supply chain/Sustainability

Actionable Research

Economic impact

Gap analysis

Industry-sponsored R&D //

Product development

Education & Workforce Development

Industry-specific

Transformative statewide policy



Collaborative Framework (*examples*)

- Public Sector
 - Office of the Governor
 - State agencies = Commerce, Education, Employment & Workforce, Transportation
 - Quasi-Public = Ports Authority, SC Research Authority, Military Base Task Force
 - Local = City of Columbia, Charleston County, Greenville, Richland County
 - Federal = Naval Information Warfare Center-Atlantic/Palmetto Tech Bridge
- Private Firms
 - Aero & Auto OEMs; (component and IT) Suppliers, AI firms
- Economic Developers...Trade Associations
- K-12/Higher Education Institutions
 - Pickens Career & Tech Center, Horry County School District
 - Clemson, College of Charleston, Trident Technical College, USC



Industry Clusters



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Other Initiatives



Palmetto Applied Research Council



SC COUNCIL ON COMPETITIVENESS SOUTH CAROLINA Fraunhofer





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#1 - Support of Industry Clusters

Networking & Connectivity
B2B Matchmaking
Thought Leadership
Education/Workforce Development

SC Asset Network - Closer Look...



SC COUNCIL ON
COMPETITIVENESS

About > How-To > Partners > Contact >

+ Get on the Map!

ASC

of Assets in List
3,653

10RULE INC
Industry: SC Tech
Partner: No

15T DEFENSE TRAINING LLC
Industry: SC Tech
Partner: No

21ST CENTURY HOLDINGS LLC
Industry: SC Logistics
Partner: No

2AM GROUP LLC (SC) - BLYTHEWOOD
Industry: SC Aerospace
Partner: No

2AM GROUP LLC (SC) - CHARLESTON
Industry: SC Aerospace
Partner: No

2AM GROUP LLC (SC) - GREER
Industry: SC Aerospace
Partner: No

Filters

Business or Education/Workforce:
- All -

Partner:
- All -

Aerospace Cluster (Y/N):
- All -

Logistics Cluster (Y/N):
- All -

Tech Industry (Y/N):
- All -

Industry Sector:
0 Selected

Highlighted Technology:
- All -

Assets

- ★ Business Partner
- ☆ Education & Workforce Partner
- Business
- Education & Workforce

SCAN tool is a GIS-enabled asset map of Aerospace, Logistics (inc. EV), Technology-Cyber (inc. AI) firms AND education & workforce training programs across SC.

Users can filter by type of industry, specific industry categories, or highlighted technologies such as AI, EV, Cyber.

[Link to SCAN](#)





Connect

- Market cluster of 400+ firms
- SC Aerospace Night = Connect industry leaders...Education
- Matchmake B2B OEM/Suppliers
- Intersect Aerospace with other SC Competes clusters: SC Tech – eVTOL, SC Logistics – Air cargo



Support

- Career Awareness
- K-12: Hi school SREB & AOPA Curriculum; CATE Schools focused on aerospace and advanced manufacturing
- College: Trident Technical College Aeronautical Training Center
- R&D: USC McNAIR Aerospace Research Center, Clemson Composites



Grow

- International Air Shows and Conferences with TeamSC
- Actionable research to identify growth opportunities & solve challenges
- Best practices in other states
- Push forward future of aerospace in SC



SC Aerospace Impact Study (2020)

THE TOTAL ECONOMIC IMPACT OF AEROSPACE IN SOUTH CAROLINA IS
\$28.8 BILLION

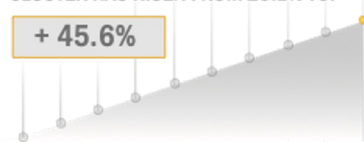
Direct & Indirect

AEROSPACE CONTRIBUTES
\$14.13 BILLION
 TO SOUTH CAROLINA'S GROSS DOMESTIC PRODUCT.

THE TOTAL NUMBER OF AEROSPACE EMPLOYEES IN 2019 WAS
136,244
Direct & Indirect

WITHIN THE LAST 10 YEARS, SC AERO CORE* AS A % OF THE TOTAL AERO CLUSTER HAS RISEN FROM 23.1% TO:

+ 45.6%



*Aero Core refers to non-military aerospace employees

AEROSPACE IS A MAJOR DRIVER OF SOUTH CAROLINA'S ECONOMY. 2009 - 2019

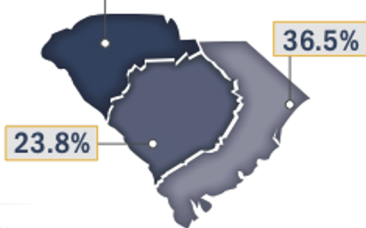
AEROSPACE EMPLOYMENT GROWTH

10.7%

SC EMPLOYMENT GROWTH

2.2%

PERCENTAGE OF PRIVATE SECTOR FIRMS BY REGION

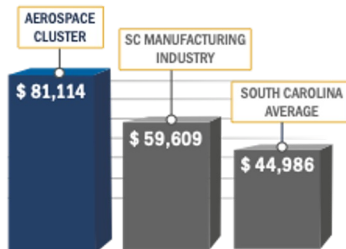


FOR EVERY **1** AEROSPACE JOB,
1.7 ADDITIONAL JOBS ARE CREATED



SOUTH CAROLINA HAS
OVER 35
 AERO-SPECIFIC EDUCATION &
 WORKFORCE TRAINING PROGRAMS

ANNUAL TOTAL EMPLOYEE COMPENSATION
All wages & salaries



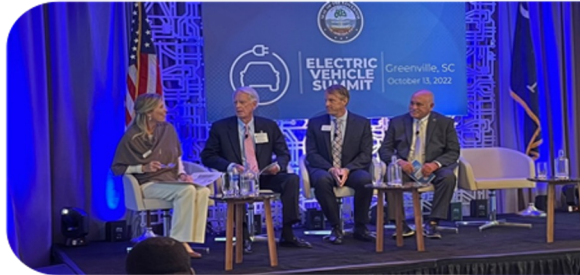
THE 2019 ESTIMATED INCREASE IN TAX REVENUE FROM SC AEROSPACE IS
\$734,575,385





Bring Awareness

- Market cluster of 600+ firms
- Career Awareness
- K-12: Lemonade & Cell Phone Supply Chain Games
- College: EV curriculum



Look Ahead

- (also) Serve as SC Freight Advisory Council (for USDOT/SCDOT)
- Workforce needs
- Emerging technologies/Areas – AI, Electrification, Sustainability



Connect the Cluster

- Tech Talk – Bring together all modes of logistics with the technologies that drive it
- State of Logistics forum
- OEM and Supplier B2Bs (including cross-sector)

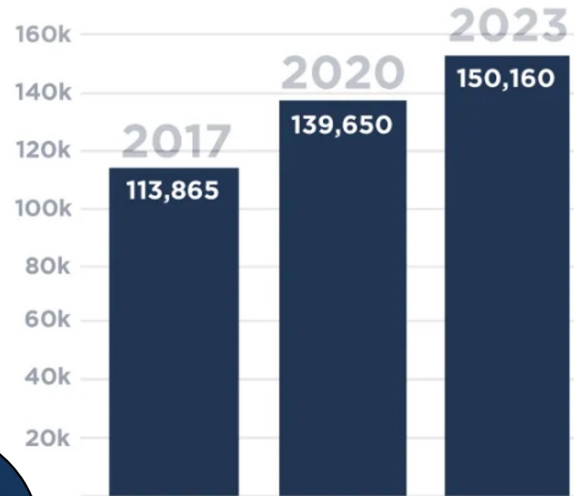


South Carolina Economic Impact



A Growing Impact: **Employment**

31.9% Growth from 2017 to 2023

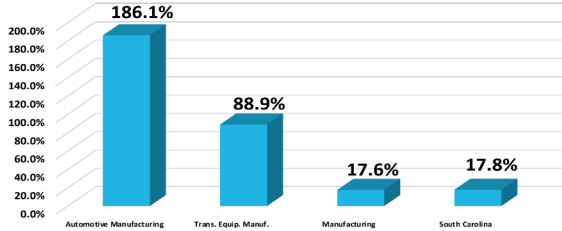


+46.4%
2017-2023 growth

Electrification Study (Gov. EV Summit 2022)



South Carolina Total Emp. Growth: 2010-2020



Source: U.S. Bureau of Labor Statistics, QCEW

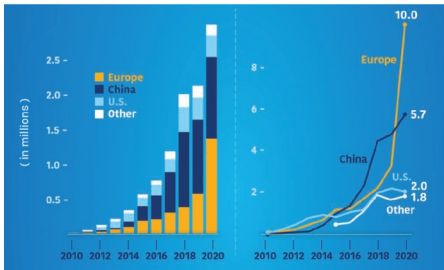
Projected Global Growth for Selected Auto. Components: 2020-2025

Greater than Projected Global Vehicle Demand		Equivalent to Projected Global Vehicle Demand		Less than Projected Global Vehicle Demand	
Component	Growth Rate	Component	Growth Rate	Component	Growth Rate
Electric Drivetrain	+475%	Body	+10%	Brakes	-5%
Batteries and Fuel Cells	+475%	Seats	+10%	Transmission	-10%
ADAS and Sensors	+150%	Info. & Communications	+9%	Exhaust System	-15%
Electronics	+22%	Frame	+9%	ICE	-15%
Interiors	+21%	Suspension	+9%	Fuel System	-15%
Climate Control	+21%	Steering	+9%		
Wheels and Tires	+18%	Axles	+6%		

Source: Deloitte, 2021

Global Electric Vehicle Trends: 2010-2020

Number of Electric Vehicle Registrations | Electric Vehicle Pct. Market Share

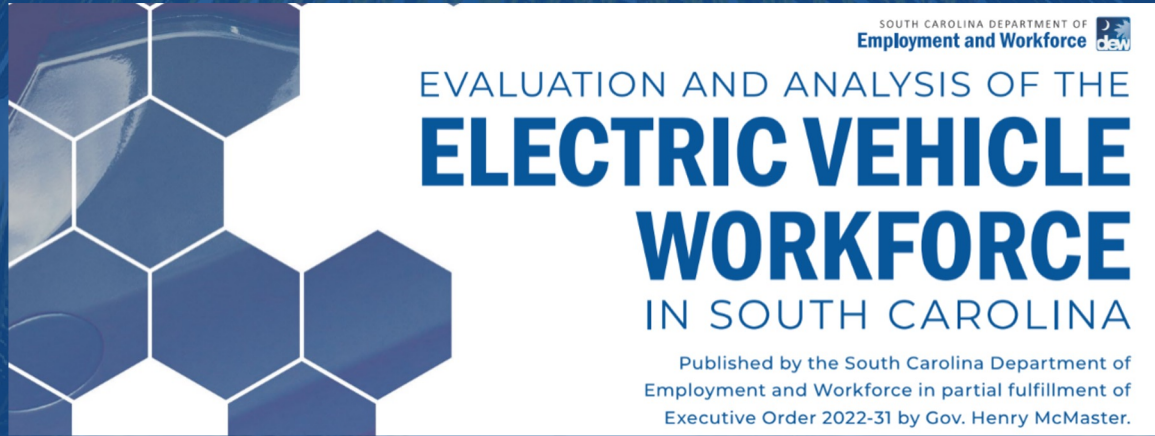



Source: International Energy Agency, 2022

	Pct. Change in Total Employment	Pct. Change in Supply Chain Employment	Pct. Change in Total Economic Output
South Carolina	-8.1%	-15.0%	-3.5%
Alabama	-4.9%	-9.4%	-2.0%
Michigan	+2.3%	+3.5%	+1.2%
Ohio	-9.2%	-14.7%	-4.9%
Tennessee	-3.5%	-5.9%	-1.7%
Texas	+25.3%	+41.0%	+10.1%



E – Mobility Research



SOUTH CAROLINA DEPARTMENT OF
Employment and Workforce 

EVALUATION AND ANALYSIS OF THE **ELECTRIC VEHICLE WORKFORCE** IN SOUTH CAROLINA

Published by the South Carolina Department of
Employment and Workforce in partial fulfillment of
Executive Order 2022-31 by Gov. Henry McMaster.

EV Supply Gap Analysis for Occupations Requiring a Postsecondary Credential

Occupation	SOC	Entry Education	Current SC Employment	Median Wage (Hourly)	Job Openings	2020 Openings	Projected Annual Job Openings (2030)	Program Completions	Supply-Gap
Design and Development									
Industrial Engineers	17-2112	Bachelor's Degree	6,654	\$41.71	626	629	531	149	(477)
Materials Engineers	17-2131	Bachelor's Degree	652	\$38.10	60	93	50	3	(57)
Mechanical Drafters	17-3013	Associate Degree	654	\$28.06	75	108	62	85	10
Environmental Engineers	17-2081	Bachelor's Degree	918	\$31.33	81	109	70	7	(74)
Mechanical Engineers	17-2141	Bachelor's Degree	5,539	\$39.66	465	602	381	257	(208)
Software Developers	15-1252	Bachelor's Degree	8,735	\$47.05	1,235	1,476	1,106	391	(844)
Electric Vehicle Maintenance									
Automotive Service Technicians and Mechanics	49-3023	Postsec. Non-Degree	10,366	\$17.69	1,167	1,275	1,105	298	(869)
Logisticians	13-1081	Bachelor's Degree	3,352	\$33.69	455	628	445	92	(363)

Advanced Energy – “SC Nexus” Tech Hub

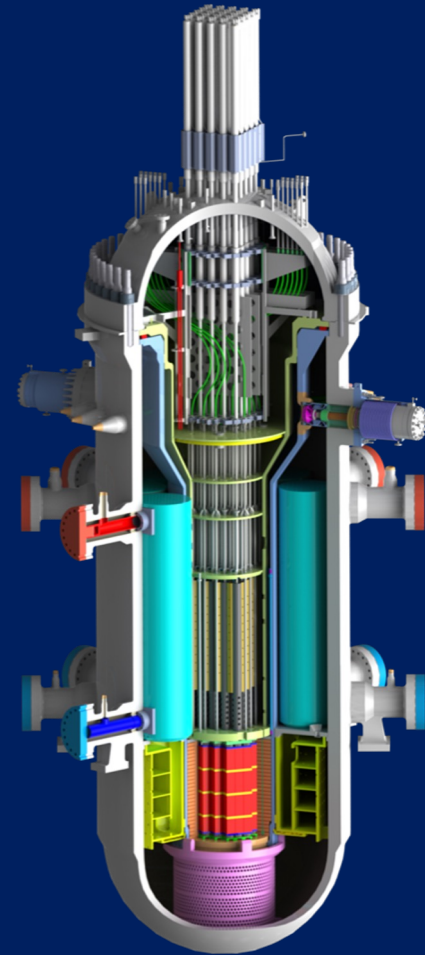
\$7.2B CapEx // **6,670** Workers implicating energy systems (Q4-2022 announced)

(defined) Geography = Midlands and Upstate regions; Aiken and Orangeburg Counties
[60% of SC’s “distressed” counties]



SC NEXUS

- **Focus** = Advanced energy storage
- High-quality, diverse job training and growth
- Closure of infrastructure gaps in rural/distressed communities
- Push SC as US leader in development and integration of leading electric-power technologies





Prepare

Readiness for emerging and evolving technologies

- Artificial Intelligence
- Quantum Computing



Connect

- Market Tech – More than **200% growth** since 2000!
- SC Decoded - Showcase cutting-edge technologies, cybersecurity
- Cross-sector B2B firm match-making



Grow

- Career awareness
- K-12: Tech, cyber, AI curriculum
- Consultation on degree and certificate programs
- Connect tech and cyber industry with extraordinary STEM teachers/programs



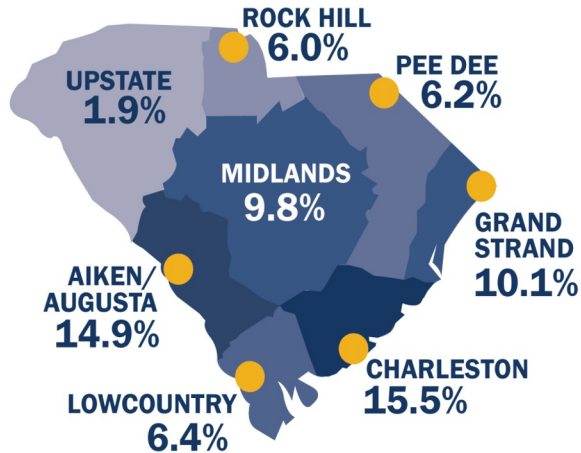
SC Tech Impact Study (2020)

TOTAL ECONOMIC
IMPACT OF SC TECH
\$89.0 BILLION
Direct & Indirect

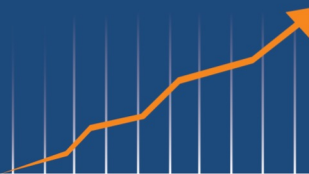
TECH JOBS PAY AN
AVERAGE WAGE OF
\$78,977

LABOR INCOME
OF SC TECH
\$14.3 BILLION

AVERAGE ANNUAL EMPLOYMENT GROWTH

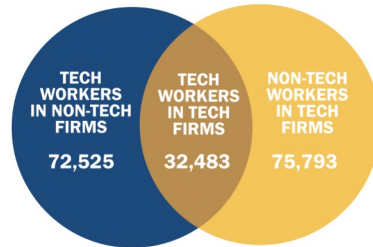
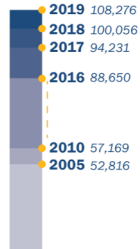


THE NUMBER OF TECH
FIRMS HAS GROWN
254%
SINCE 2000



SC Tech Impact Study, *contin.*

EMPLOYMENT GROWTH WITHIN TECH FIRMS

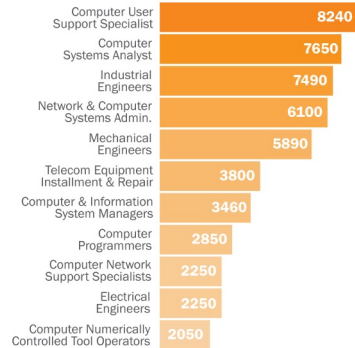


4-STEP FIRM IDENTIFICATION SYSTEM



- 1 Identify all business categories in SC likely to contain or represent tech firms
- 2 Use D&B database to identify all tech firms based on these category definitions
- 3 Manually inspect firm list
- 4 Incorporate additional tech firms from other external sources

2019 TOP TECHNOLOGY OCCUPATIONS



TOP 10 INDUSTRIES WITH LARGEST CONCENTRATION OF TECH EMPLOYEES

- 1 Telecommunications
- 2 Computer & Electronic Product Manufacturing
- 3 Other Information Services
- 4 Data Processing, Hosting, & Related Services
- 5 Publishing Industries (Except Internet)
- 6 Broadcasting (Except Internet)
- 7 Motion Picture & Sound Recording Industries
- 8 Professional, Scientific, & Technical Services
- 9 Transportation Equipment Manufacturing
- 10 Electrical Equipment Manufacturing



Palmetto AI Corridor

- Rapid Innovation Labs
- AI in K-12 Education
- Career Awareness
- College data science student OJT
- Summer camps for high schoolers and 2-/4-yr college students
- “PAL” (Palmetto Automated Learning) Robot





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#2 - Actionable Research

Economic Impact Studies
Supply Chain Analyses
Workforce Needs
Education Pathways

Actionable Research

- Cluster strategic planning for Aerospace, Logistics, Technology
- Population projections
- TransformSC K-12 initiative on transformational strategies
- US Cluster Mapping project with Harvard University
- High-growth firm study
- Workforce plan roadmap
- Public schools historical analysis
- Capital markets study
- Multi-state Supply chain gaps and technology trends in Aerospace, Logistics
- Automotive industry North American sustainability analysis
- Economic impact studies of Aerospace, Logistics, Recycling (business), Technology/Cybersecurity, Textiles/Apparel, Tires, Tourism
- Early childhood case studies
- Action plans for Manufacturing, Tourism
- Warehousing/Distribution center cost-competitiveness analysis (East Coast)



SC Fraunhofer USA Alliance



Collaborative of SC Competes (program director), SC Department of Commerce (funder), & research expertise of Fraunhofer (USA/Worldwide) network and SC's academic institutions.

\$CASH\$ MATCH FOR INDUSTRY-SPONSORED RESEARCH

Alliance and research it supports gives SC an edge by accelerating applied research and increasing competitiveness of SC companies.



Alliance Projects....

Innovation Projects Supported by the South Carolina Fraunhofer USA Alliance

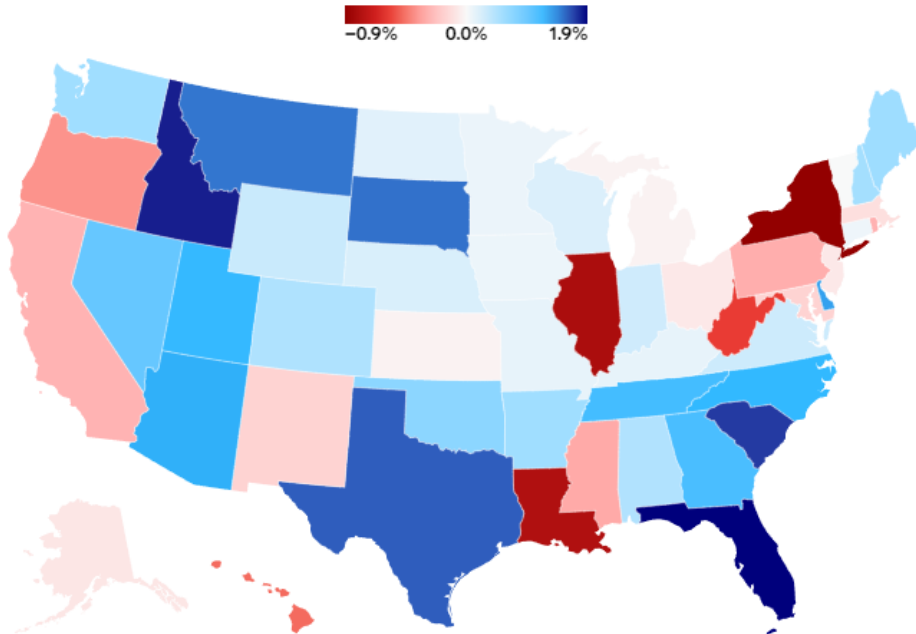
Completed Projects			Ongoing Projects		
Project Title	SC Companies/Agencies	Lead Institute/Other	Project Title	SC Companies/Agencies	Lead Institute/Other
Assembly Defect Detection Using Wearables			Telehealth & Data Analytics		
Production Line & Workflow Optimization			Fuel Cells Manufacturing	JTEKT	
Wire Harness Automation			Biomanufacturing of Enzymes & Protein Catalysts	IMCS	
Cloud-based Data Platform	DATOS TECHNOLOGIES		AI - Training, Competence Development & Knowledge Transfer	BOSCH	
Machine System Integration	SIEMENS Heraeus		Industry 4.0 Data Transformation, Machine Learning & AI (Operations)	DELTA BRAVO	
Advanced Visual Inspection System	SAMSUNG		AI Models, Predict Satellite Anomalies, Space Weather Events		
Development of Cloud-Based AI Platforms			Proactive & Automated Material Control		
Implementing Industry 4.0	Rexroth		Production of Metallic Bipolar Plates for PEM Fuel Cells	JTEKT	
Robotic Guided Fixture Loading	RMF		Separator Technology for Rechargeable Lithium Metal Batteries	Soteria	
Predictive Analysis of Manufacturing			Optimization of Digitalization for Assembly & Warehouse	SIEMENS	
Business Readiness for Vaccine Production			High Pressure Resin Transfer Molding for Cycling Industry	TIME	
			Digitalization for Warehouse of the Future	LOCKHEED MARTIN	

~\$2 Million matched since April 2020



Population Trends

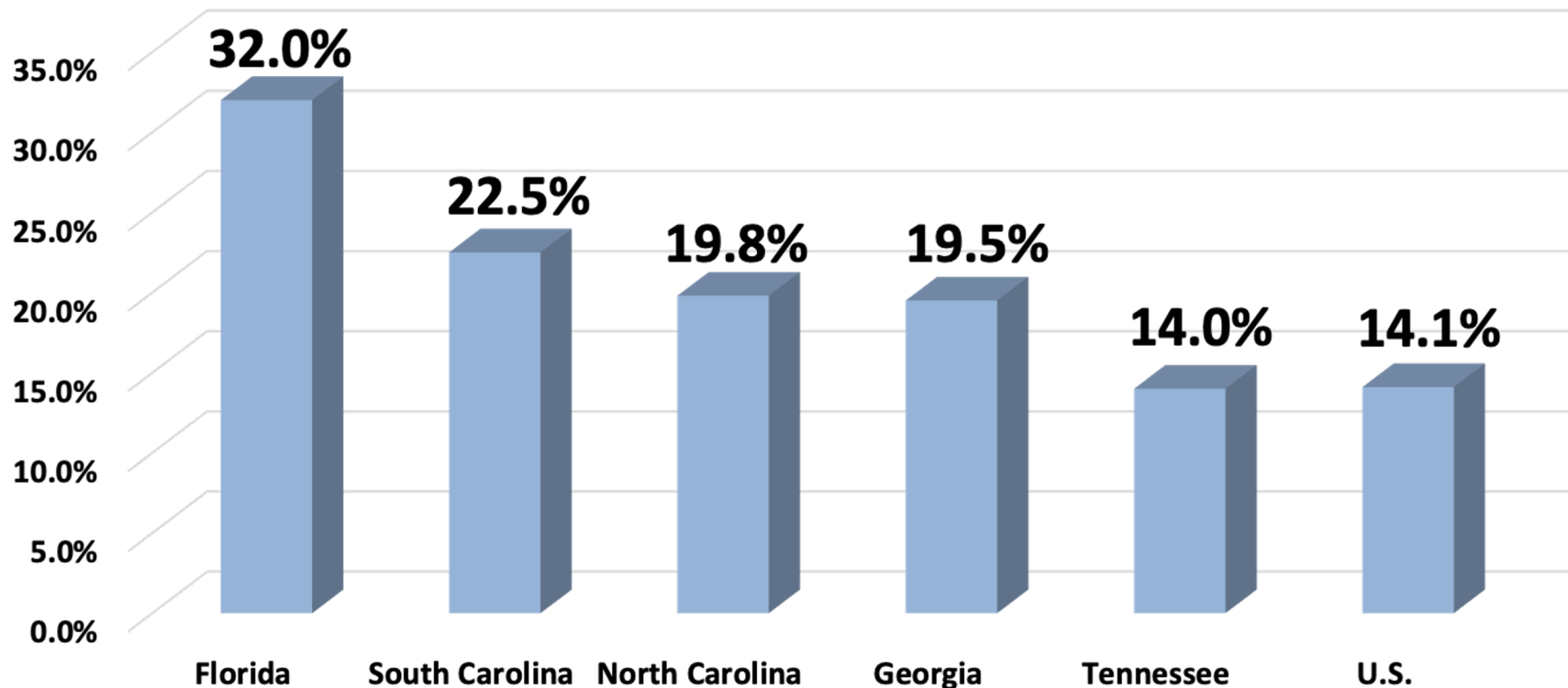
Population changes, July 1, 2021 to July 1, 2022



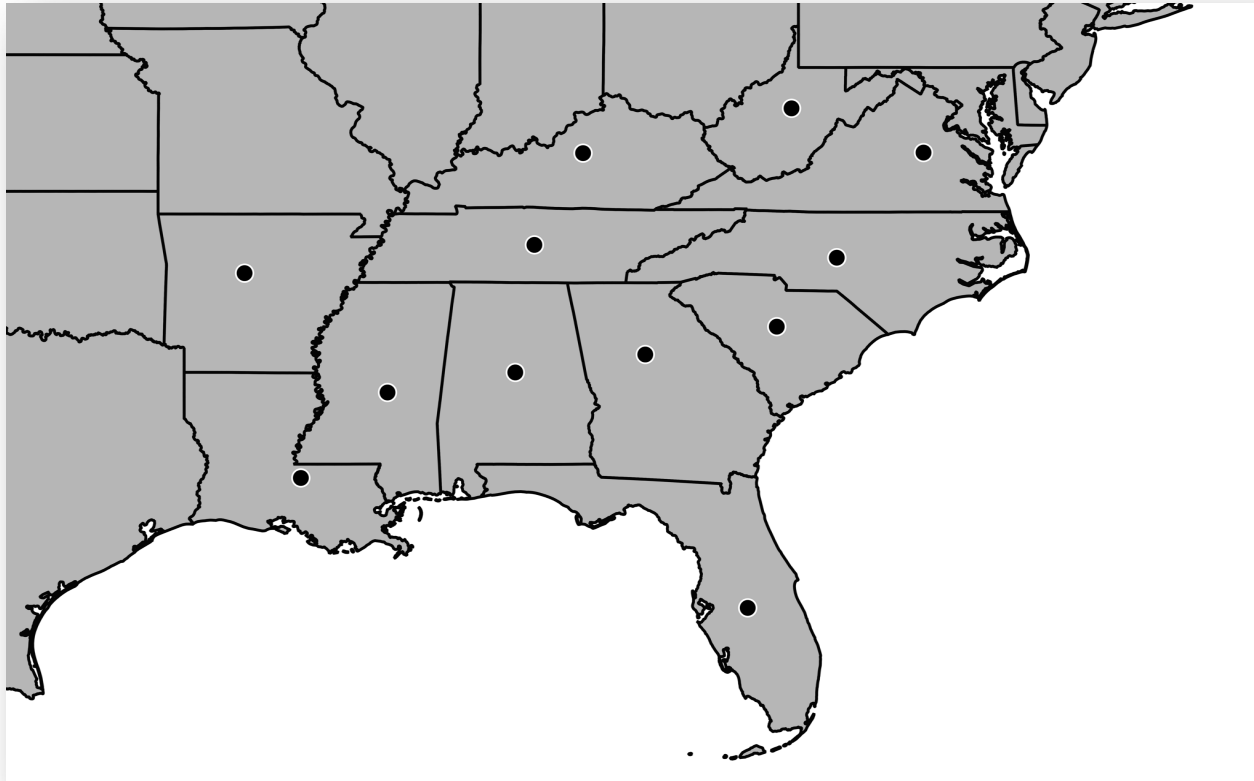
- The southeast grew by over 864,000 residents between July 1, 2021 and July 1, 2022, one of the fastest growing areas in the country.
- The southeast and the western region are areas that have experienced the strongest population growth over the previous decade.



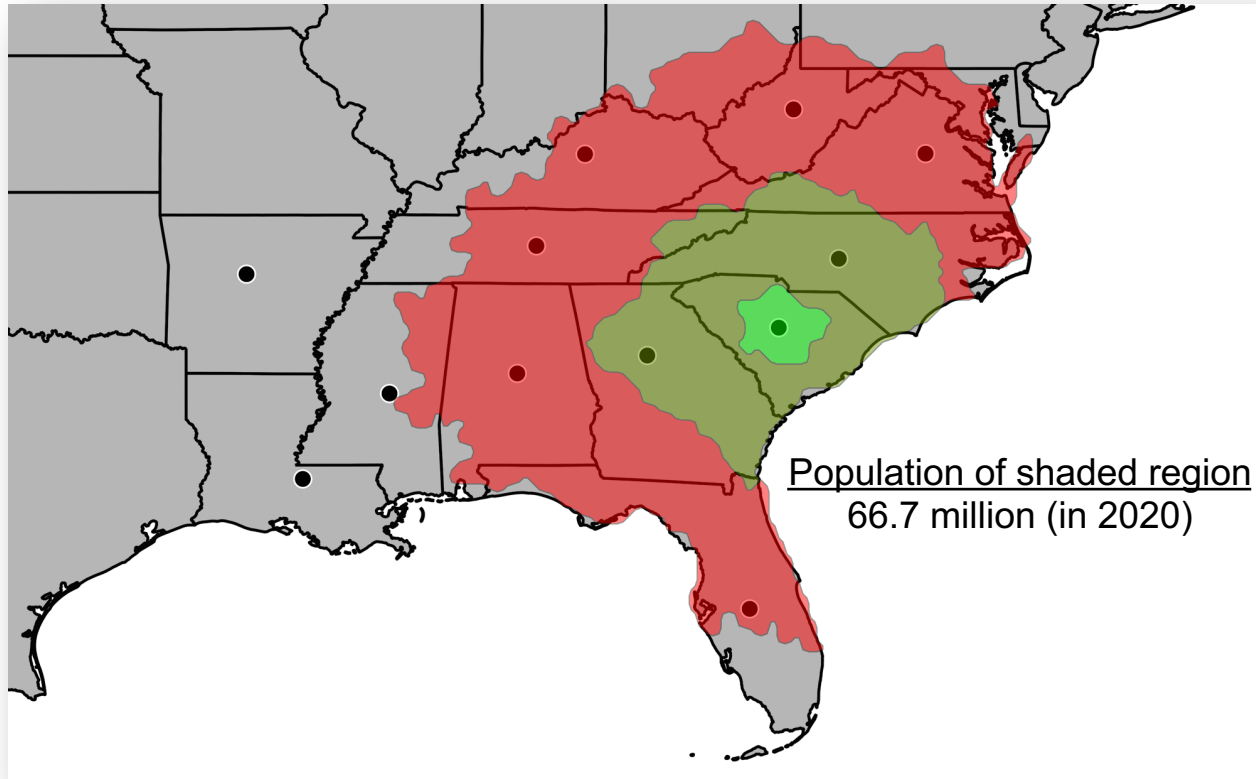
Projected Population Growth: 2020-2040



Drive Times from Population Centroids



Drive Times from Population Centroids



SC's Labor Force Participation (*problem*)

Bottom Line Findings

(SC has one of *lowest* LFP rates in US)



- ~46% of respondents indicated they are currently working in some form,
- Additional 26% are individuals who are not available to work (*e.g.*, students, retirees, disabled or health issues),
- ...Leaving **~28% of respondents who are not working but could work.**

BARRIERS (*e.g.*)

- Childcare/Eldercare, Transportation, Addictions, Aging pop

WHY IT MATTERS....





SC COUNCIL ON COMPETITIVENESS

#3 - Education & Workforce Development

Industry-Talent “Bridge”
Career Pathways & Mapping
Transformative Policy

Profile of the South Carolina Graduate

PROFILE OF THE South Carolina Graduate

WORLD-CLASS KNOWLEDGE

Rigorous standards in language arts and math for career and college readiness

Multiple languages, science, technology, engineering, mathematics (STEM), arts and social sciences



WORLD-CLASS SKILLS

Creativity and innovation

Critical thinking and problem solving

Collaboration and teamwork

Communication, information, media and technology

Knowing how to learn

LIFE AND CAREER CHARACTERISTICS

Integrity • Self-direction • Global perspective • Perseverance • Work ethic • Interpersonal skills

© SCASA Superintendents' Roundtable

Codified by the South Carolina General Assembly in 2016

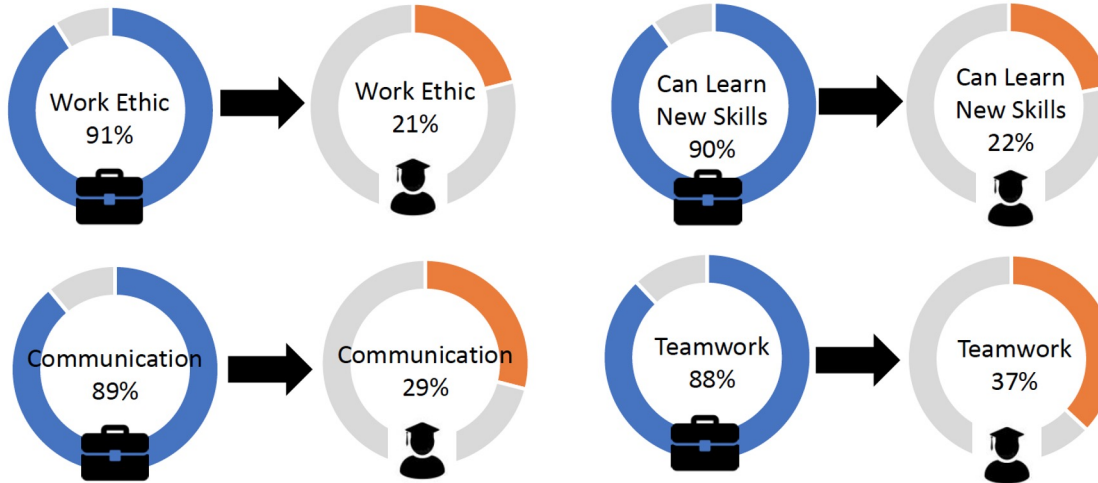
Adopted by: SC Arts Alliance, SC Arts in Basic Curriculum Steering Committee, SCASCD, SC Chamber of Commerce, SC Coalition for Math & Science, SC Commission on Higher Education, SC Council on Competitiveness, SC Education Oversight Committee, SC School Boards Association, SC State Board of Education, SC State Department of Education, TransformSC Schools and Districts




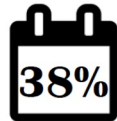
Skills versus Needs


Business Needs and Student Skills

- SC hiring managers saying skill is "extremely" or "very important."**
- SC educators saying student skills are "Excellent" or "Good."**



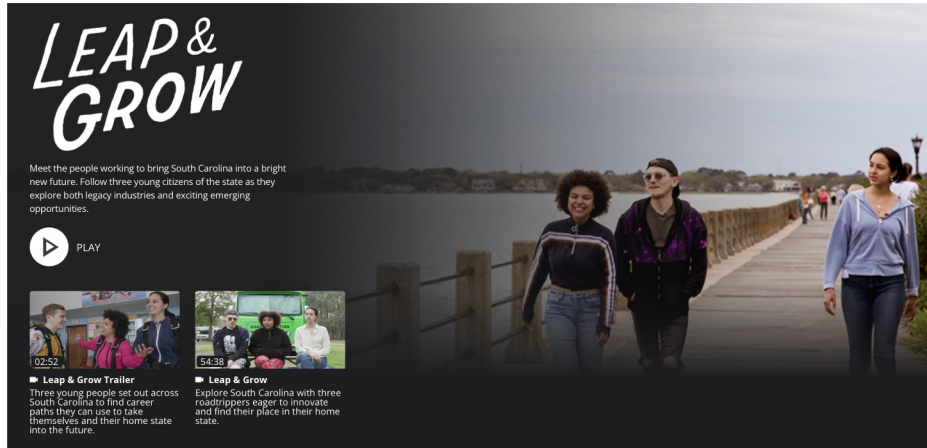
 **19%** of educators think SC graduates are ready for the workforce and only **37%** of students themselves.

 **38%** of educators think graduates will adjust to the workforce in 3 months.

 **50%+** say graduates will adjust within six months.

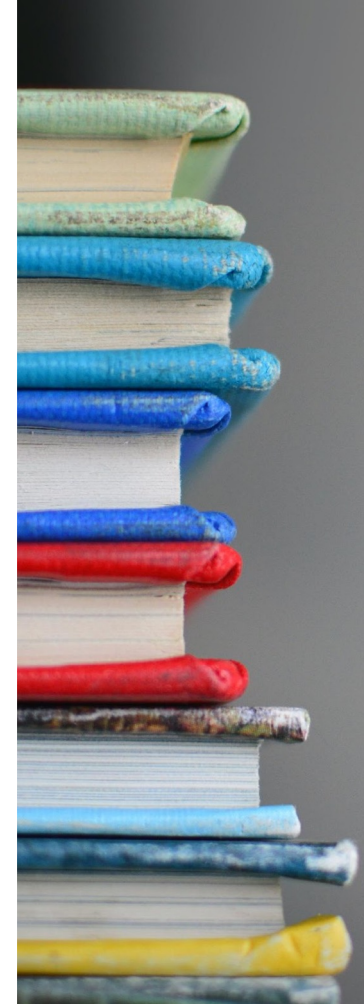
Roadtrip Nation: Career Journey/Awareness

2023 “Youth Category” Emmy Award!



- Community Hub- Resources & Career exposure

<https://roadtripation.com/roadtrip/south-carolina-documentary/62e49370f0e8280857d0ae38>



SC Competes Team



Adrienne Beasley
Director of Strategy & Communications



Callie Price
Senior Program Manager



Susie Shannon
President & CEO



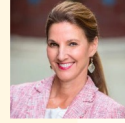
Alex Albrecht
Communications Coordinator



TBD
Executive Coordinator



Amanda Campbell
Creative Specialist



Suzanne Dickerson
Director,
SC Fraunhofer USA Alliance



Stephen Astemborski
Director,
SC Aerospace



Marcel Schaefer
SCFUSA Project
Coordinator



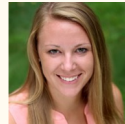
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Jamie DeMent
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Technology Initiatives



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TransformSC



Amy Sartain
Director,
SC Logistics



Resources

All resources available at www.sccompeter.org

[Electrification Study & Economic Impact of Select South Carolina Sectors \(2022\)](#)

[SC Logistics Population Growth Study \(2023\)](#)

[SC Logistics Economic Impact Report \(2023\)](#)

[AI Rapid Innovation Lab One-Pager and Report \(2022\)](#)

[SC Asset Network \(SCAN\) Tool](#)

[Strategies for Hiring Based on Skills \(2022\)](#)

[SC Graduate Skills and Dispositions Assessment Analysis \(2022\)](#)





SC COUNCIL ON COMPETITIVENESS



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