Disruption Over Destruction: LEAD's Automation Research

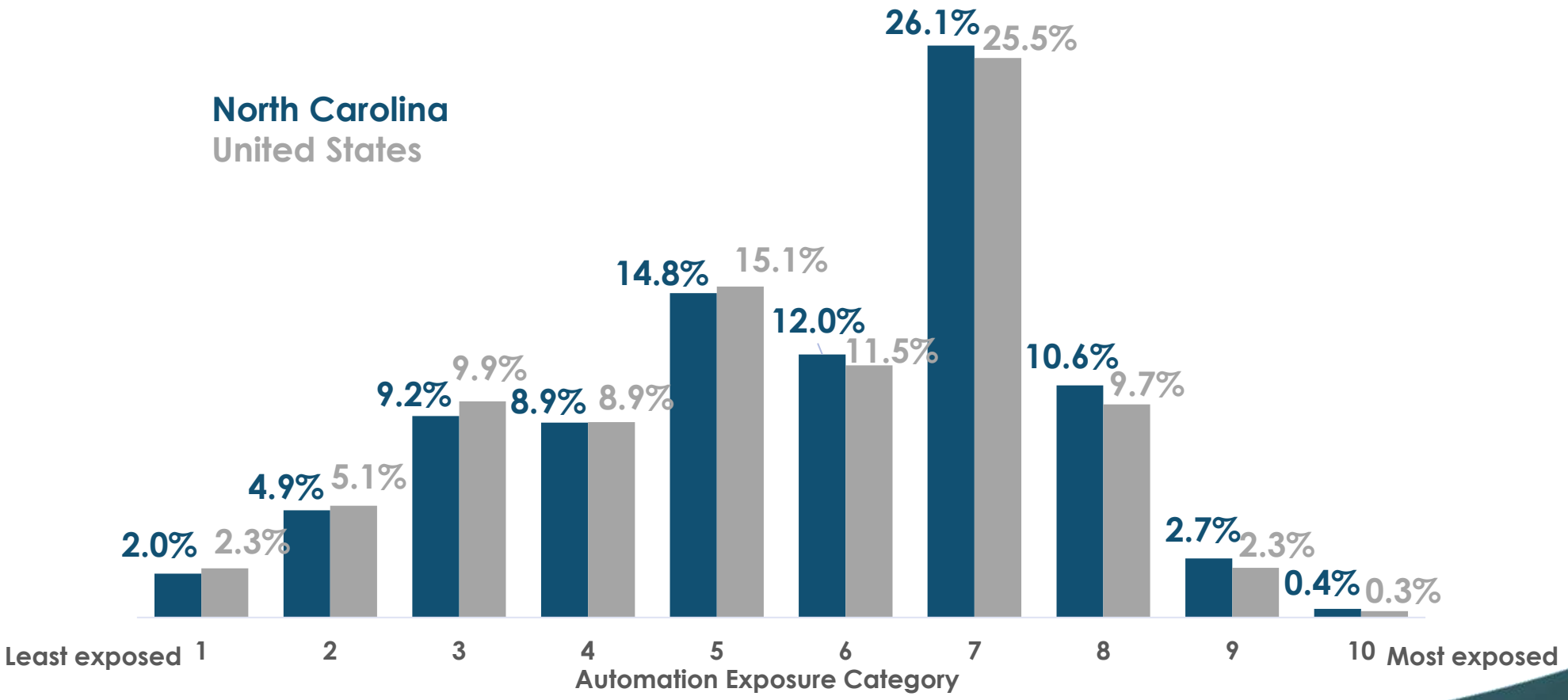
Neil Harrington
Strategic Data Analyst
LEAD, NC Commerce

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

Five things to know from the research

1. North Carolina could face slightly more exposure than US

Share of total employment by automation exposure category

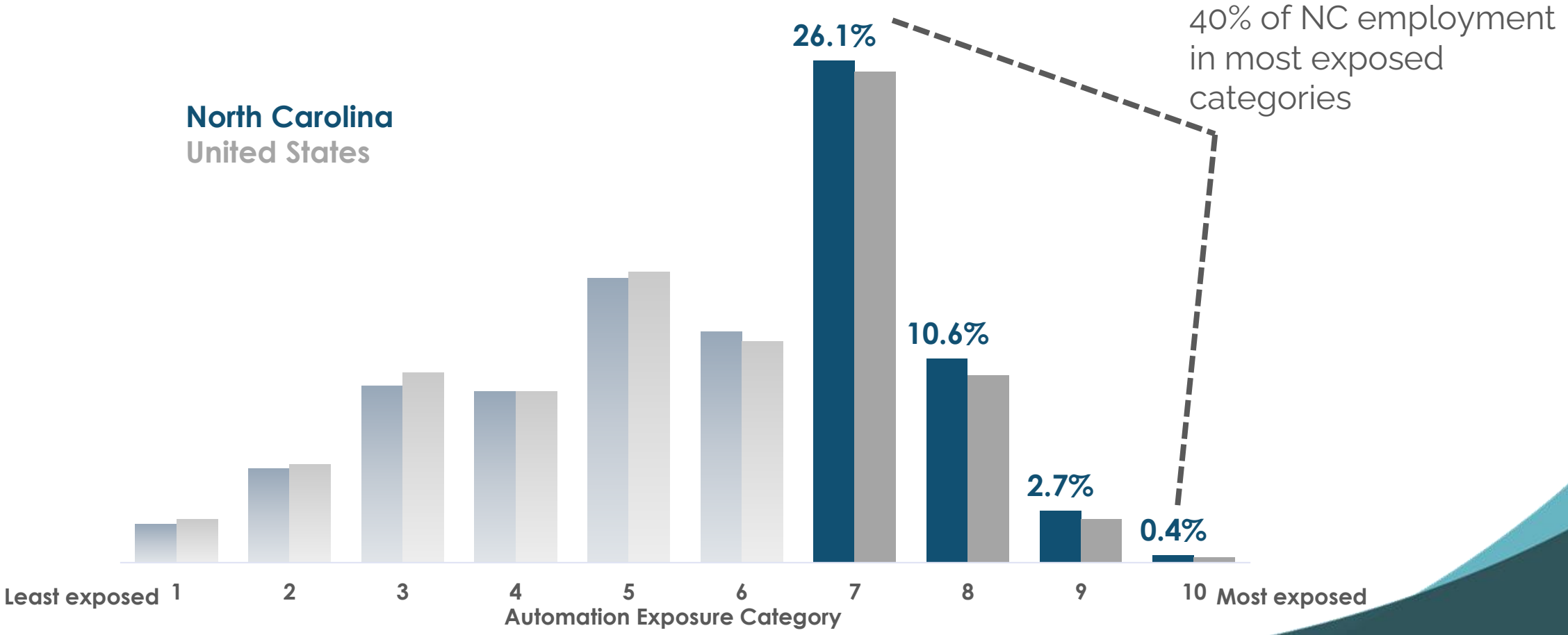


SOURCE: LEAD, NC Commerce
BLS OEWS & LMI Institute data

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

1. North Carolina could face slightly more exposure than US

Share of total employment by automation exposure category

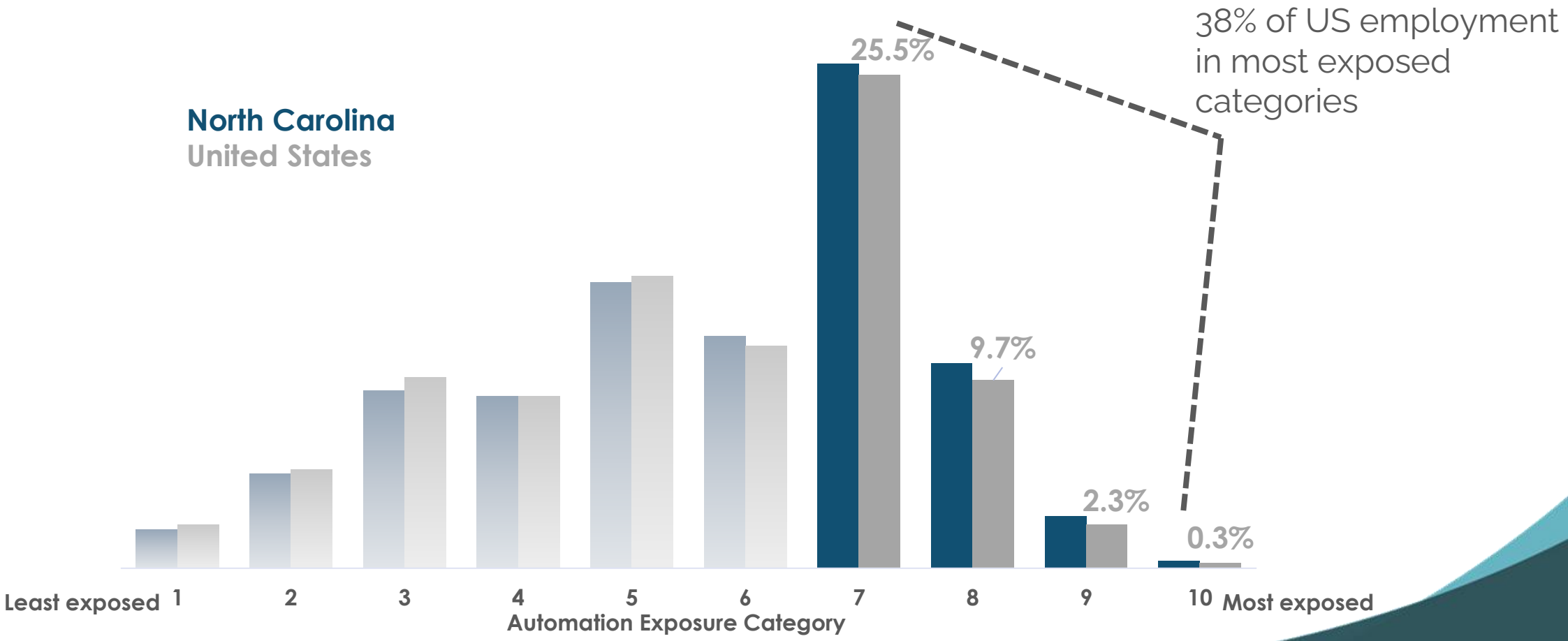


SOURCE: LEAD, NC Commerce
BLS OEWS & LMI Institute data

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

1. North Carolina could face slightly more exposure than US

Share of total employment by automation exposure category

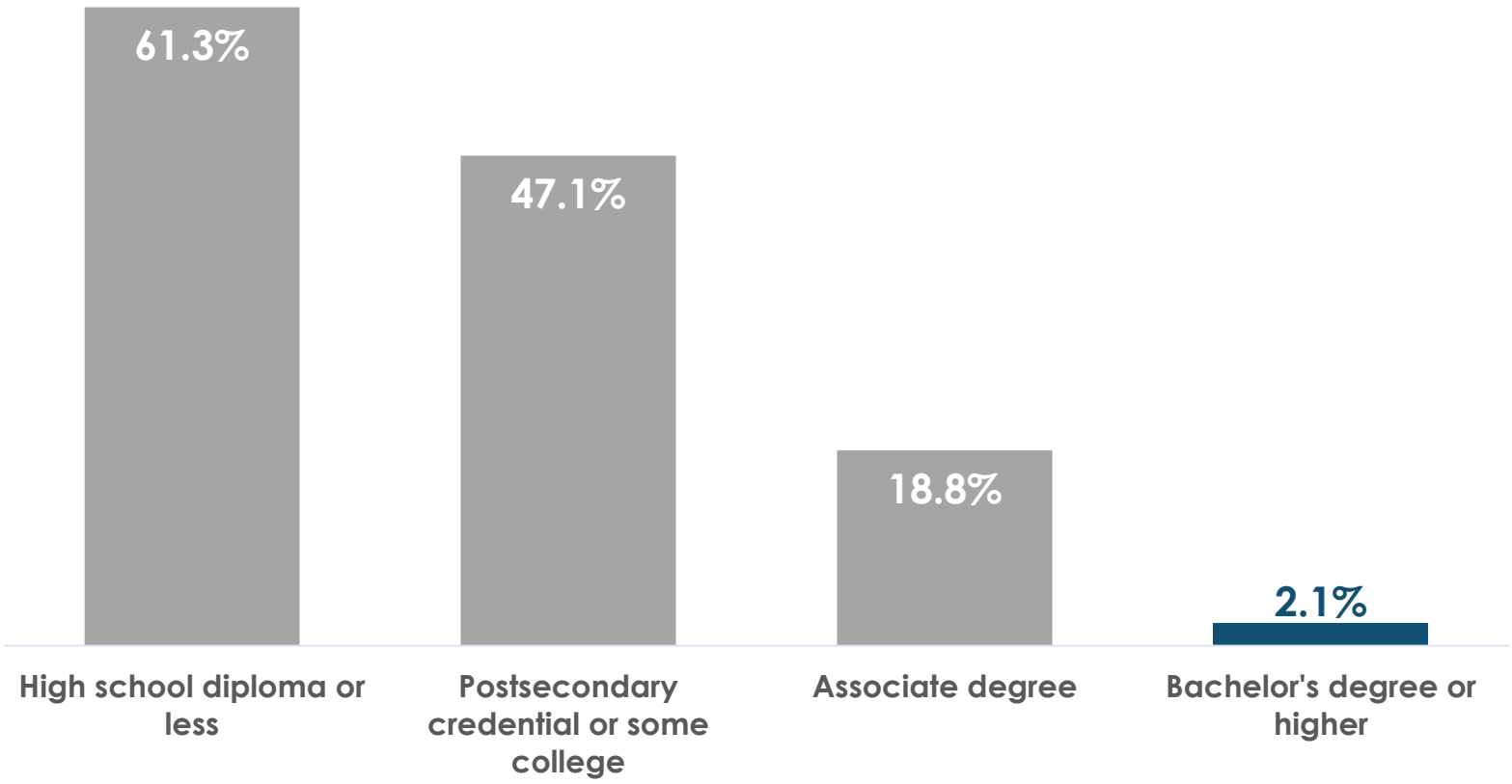


SOURCE: LEAD, NC Commerce
BLS OEWS & LMI Institute data

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

2. Lower-educated jobs are more exposed

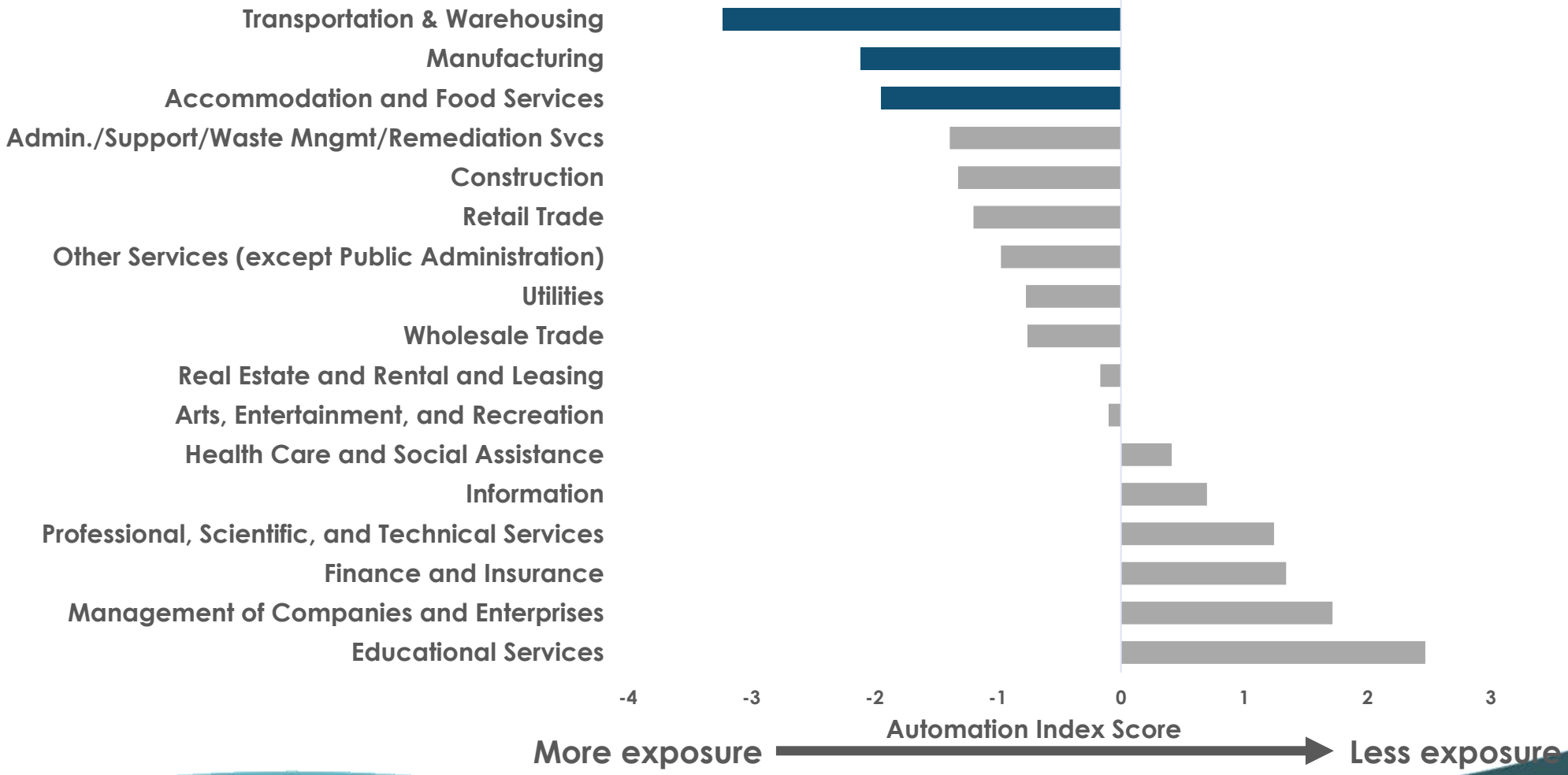
Share of employment in high exposure categories by occupation's typical minimum education required



SOURCE: LEAD, NC Commerce
BLS OEWS & LMI Institute data

3. Transportation & Warehousing, Manufacturing, and Accommodation and Food Services most exposed to automation

Automation exposure scores at 2-digit NAICS industry sector level

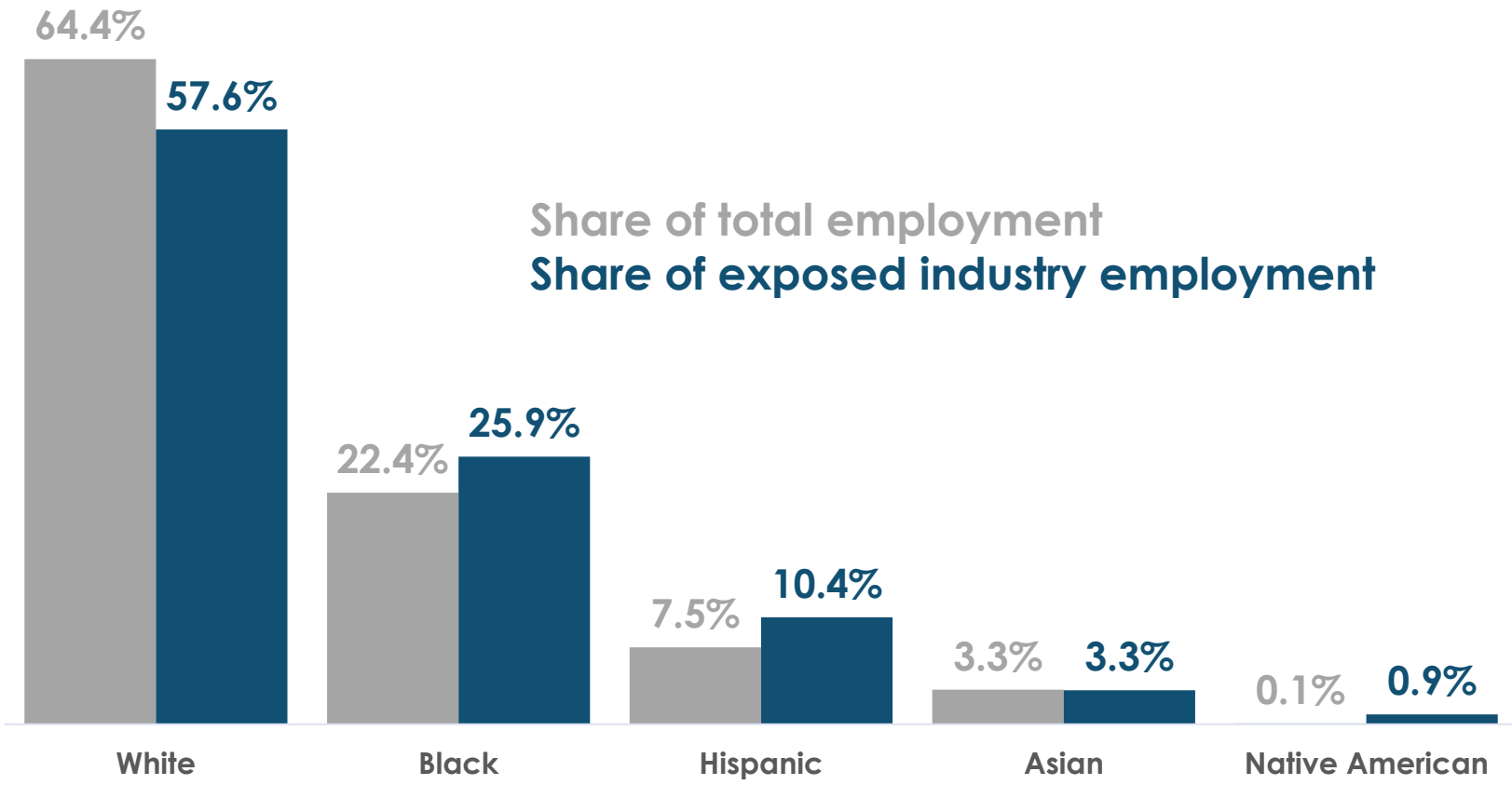


SOURCE: LEAD, NC Commerce
BLS OEWS & LMI Institute data

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

4a. Which racial/ethnic groups might face more exposure?

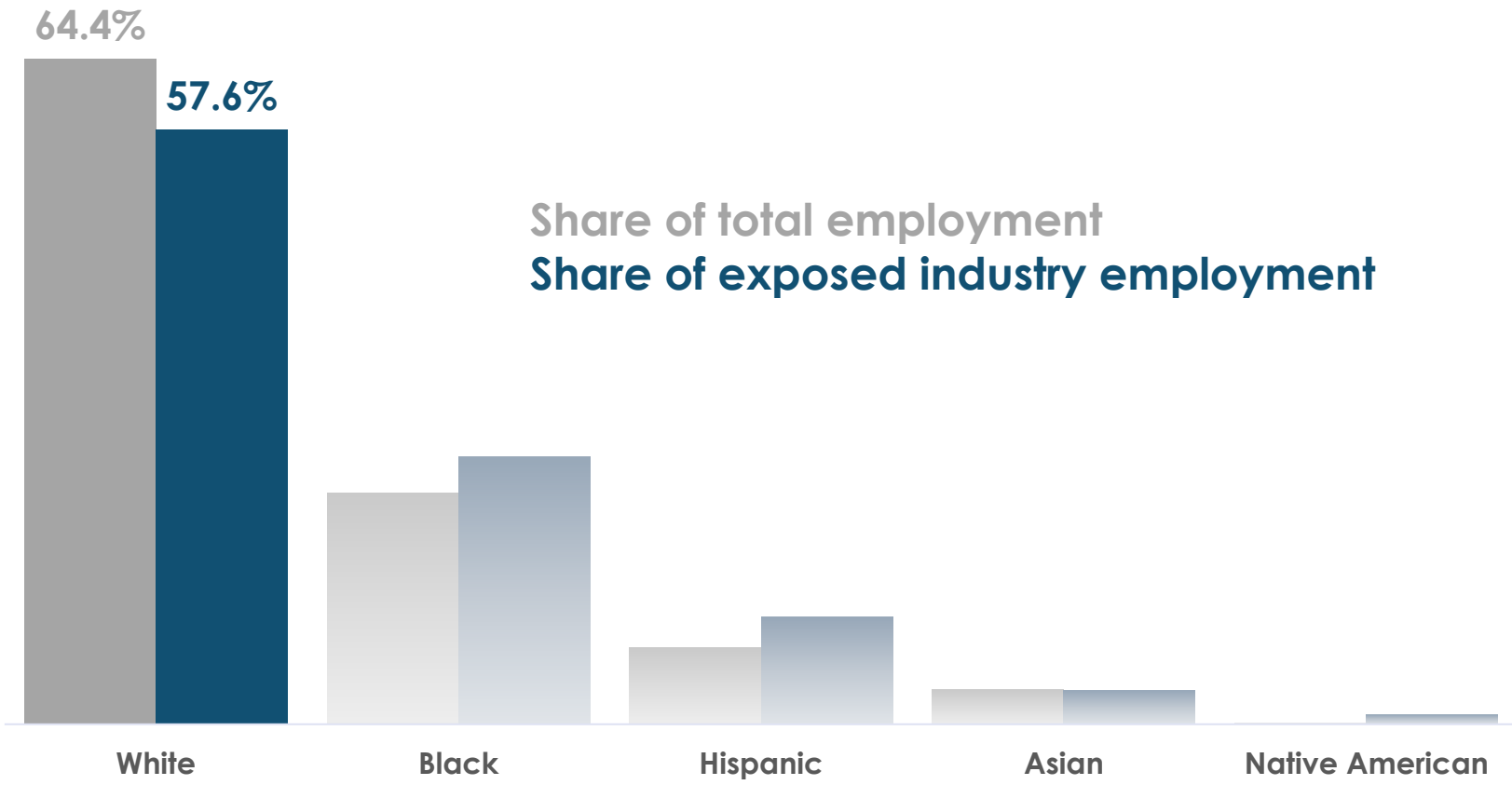
Shares of total employment and exposed industry employment by race and ethnicity, 2021 annual average



SOURCE: LEAD, NC Commerce
QWI & LMI Institute data

4a. NC's white workers have largest share in exposed industries…

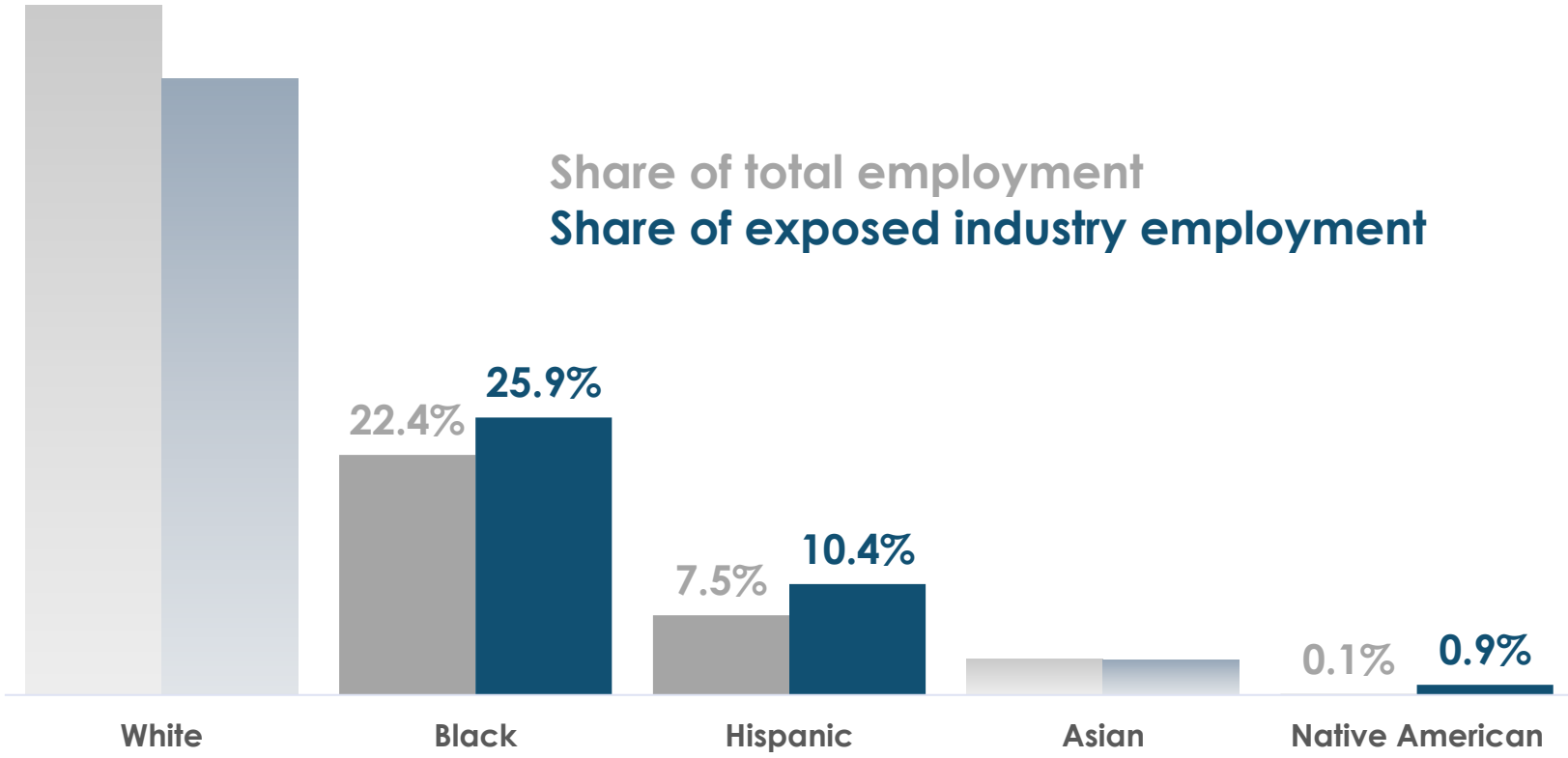
Shares of total employment and exposed industry employment by race and ethnicity, 2021 annual average



SOURCE: LEAD, NC Commerce
QWI & LMI Institute data

4a. …but workers of color overrepresented

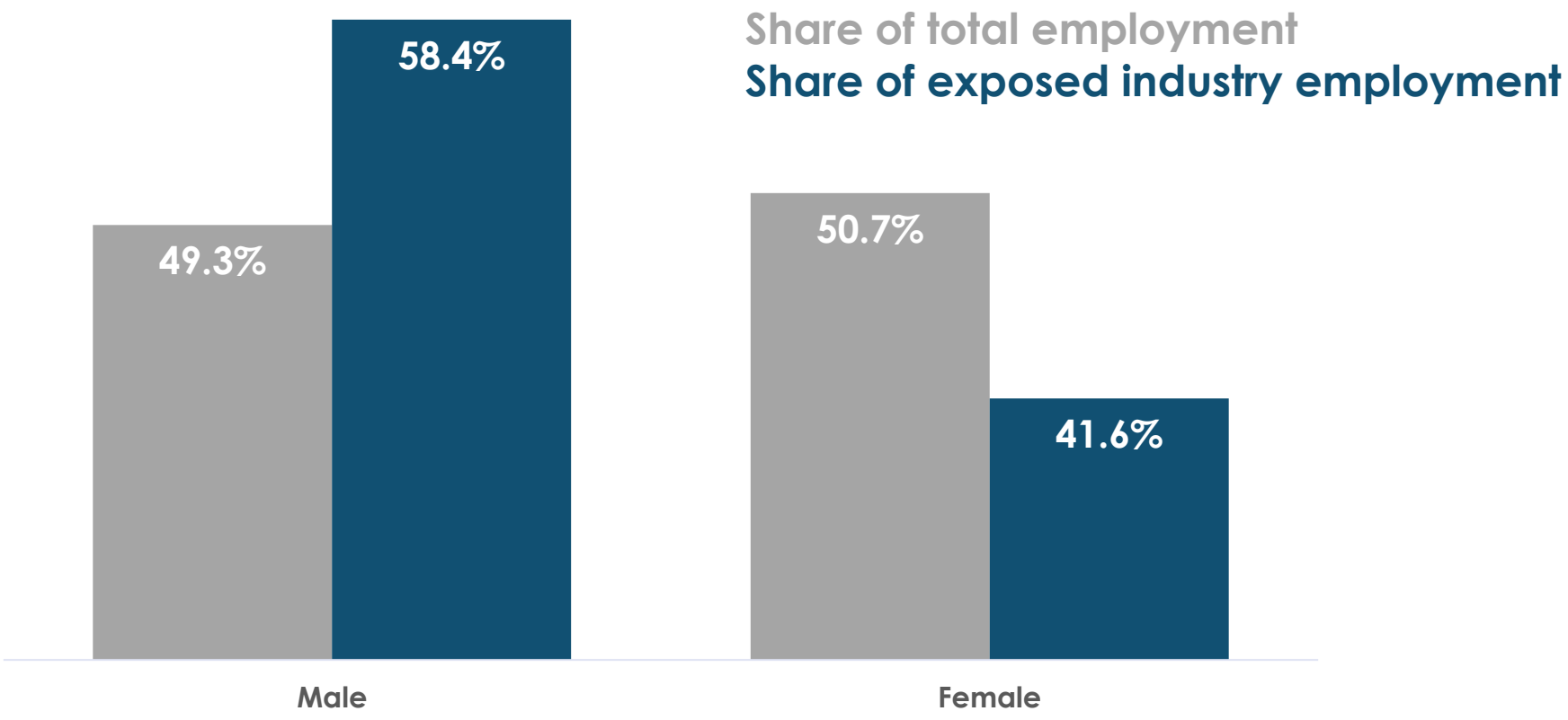
Shares of total employment and exposed industry employment by race and ethnicity, 2021 annual average



SOURCE: LEAD, NC Commerce
QWI & LMI Institute data

4b. Male workers more exposed than female

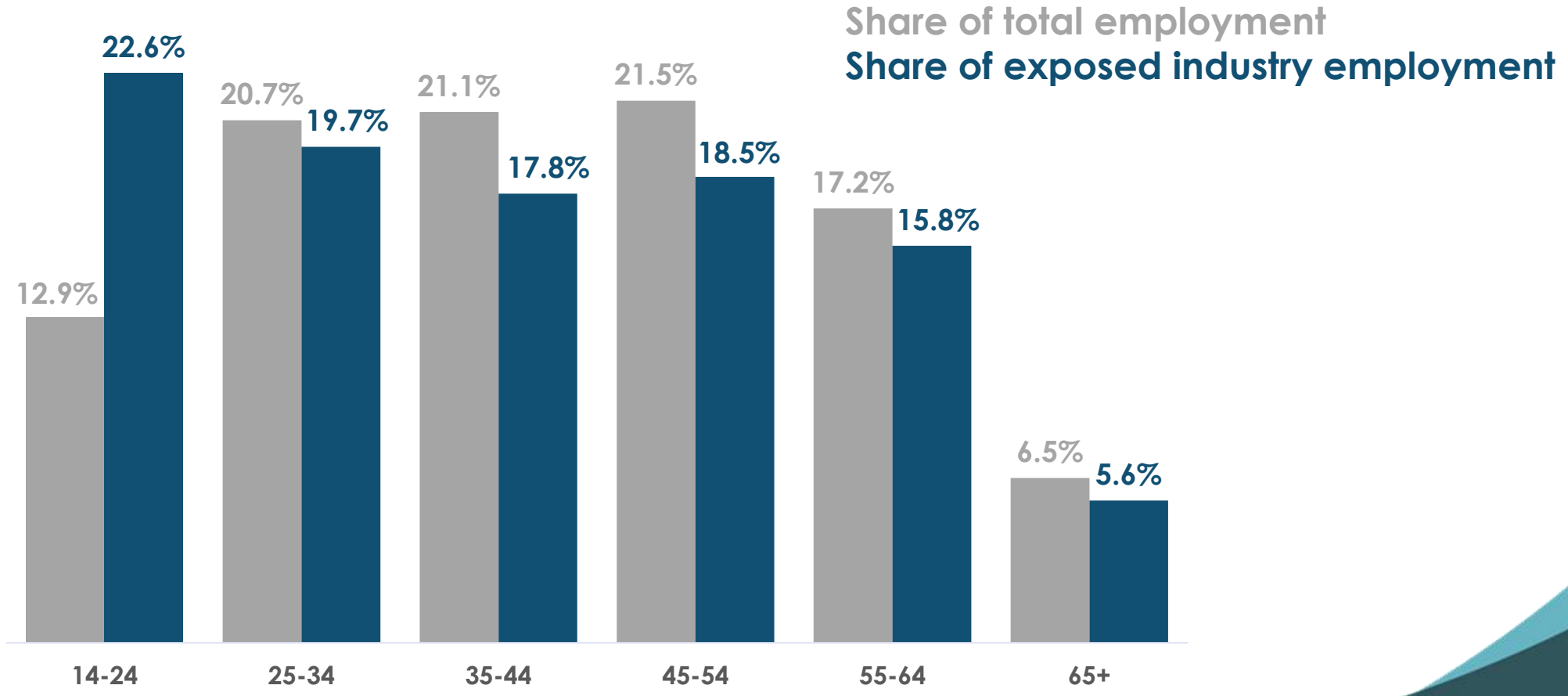
Shares of total employment and exposed industry employment by sex, 2021 annual average



SOURCE: LEAD, NC Commerce
QWI & LMI Institute data

4c. Exposure spread relatively evenly across age groups…

Shares of total employment and exposed industry employment by age, 2021 annual average

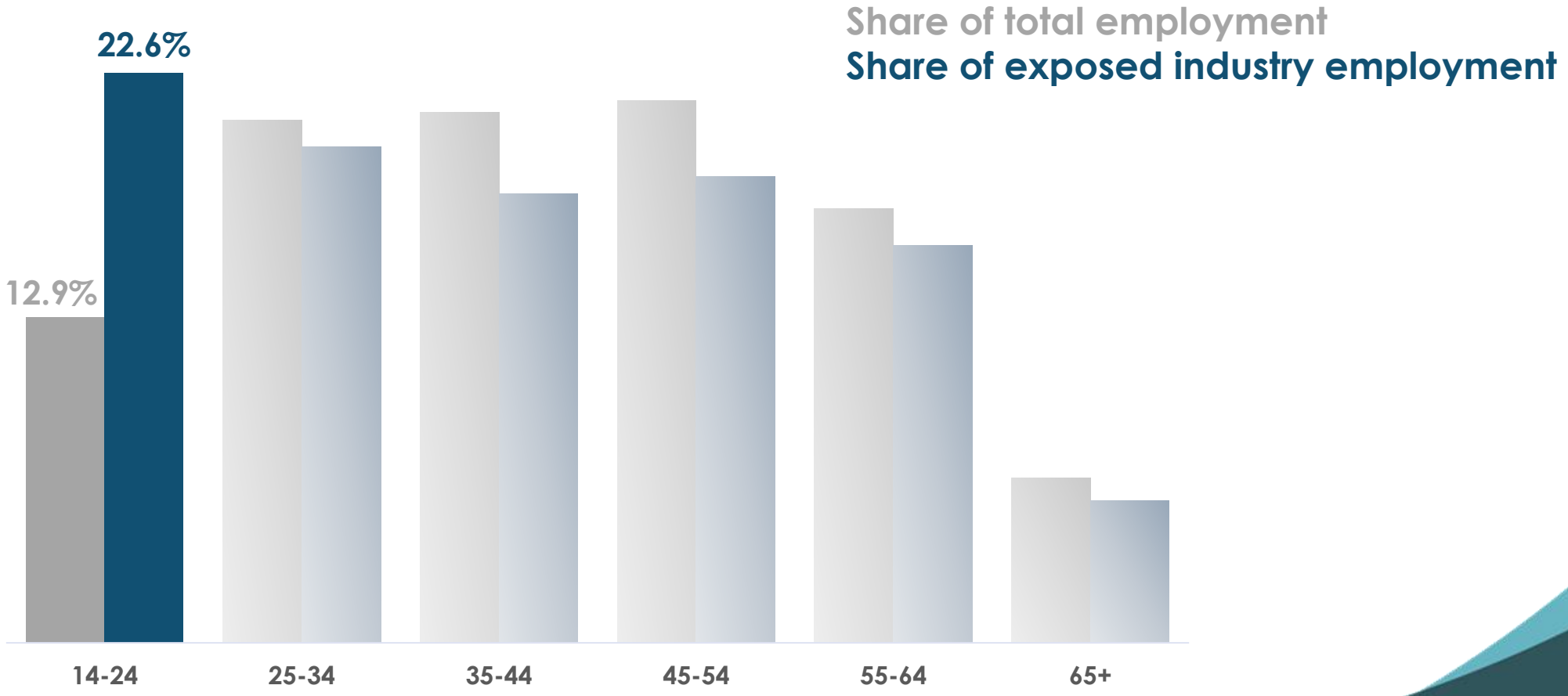


SOURCE: LEAD, NC Commerce
QWI & LMI Institute data

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

4c. …but young workers notably overrepresented

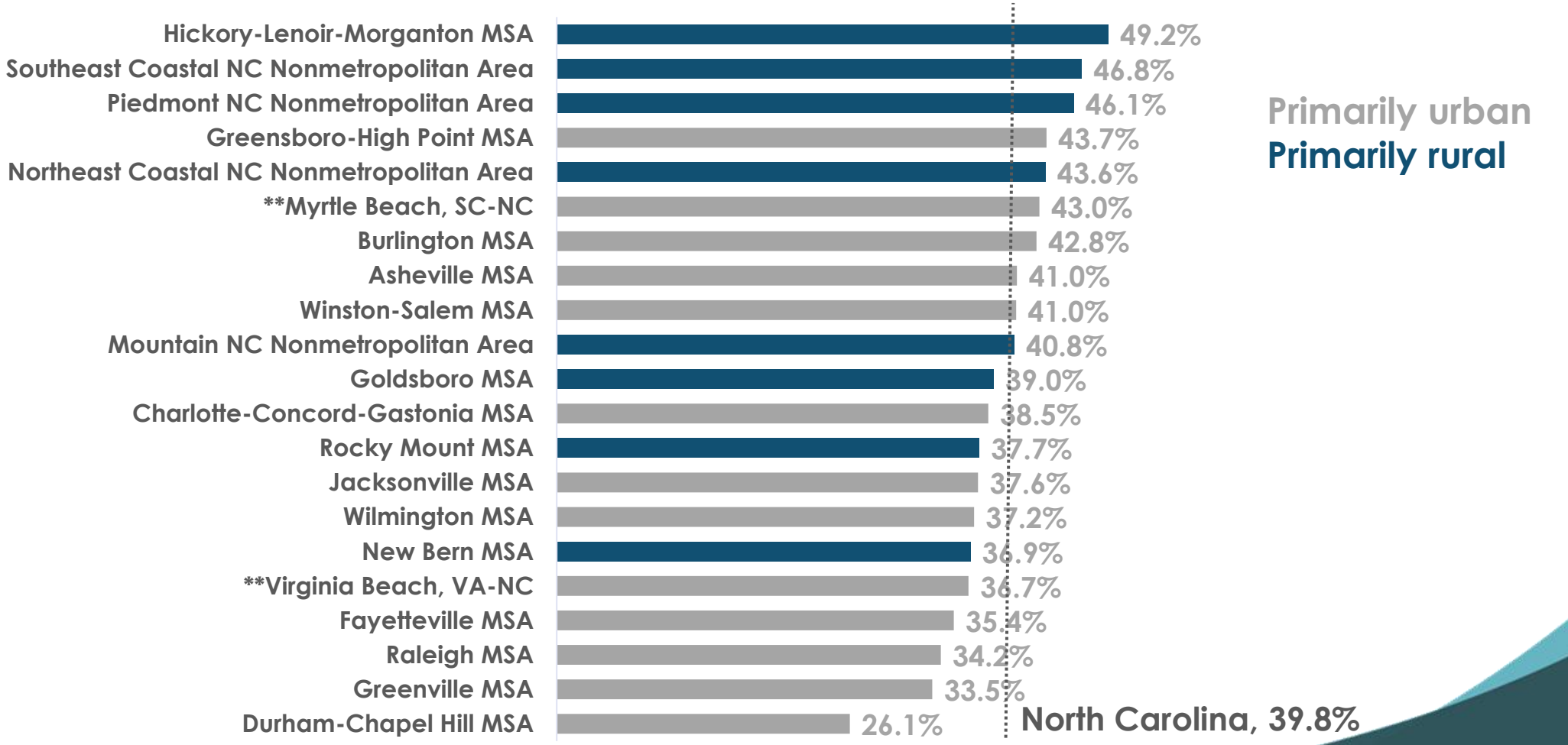
Shares of total employment and exposed industry employment by age, 2021 annual average



SOURCE: LEAD, NC Commerce
QWI & LMI Institute data

5. Rural regions face slightly more exposure……

Share of total employment in occupations with high automation exposure by MSA

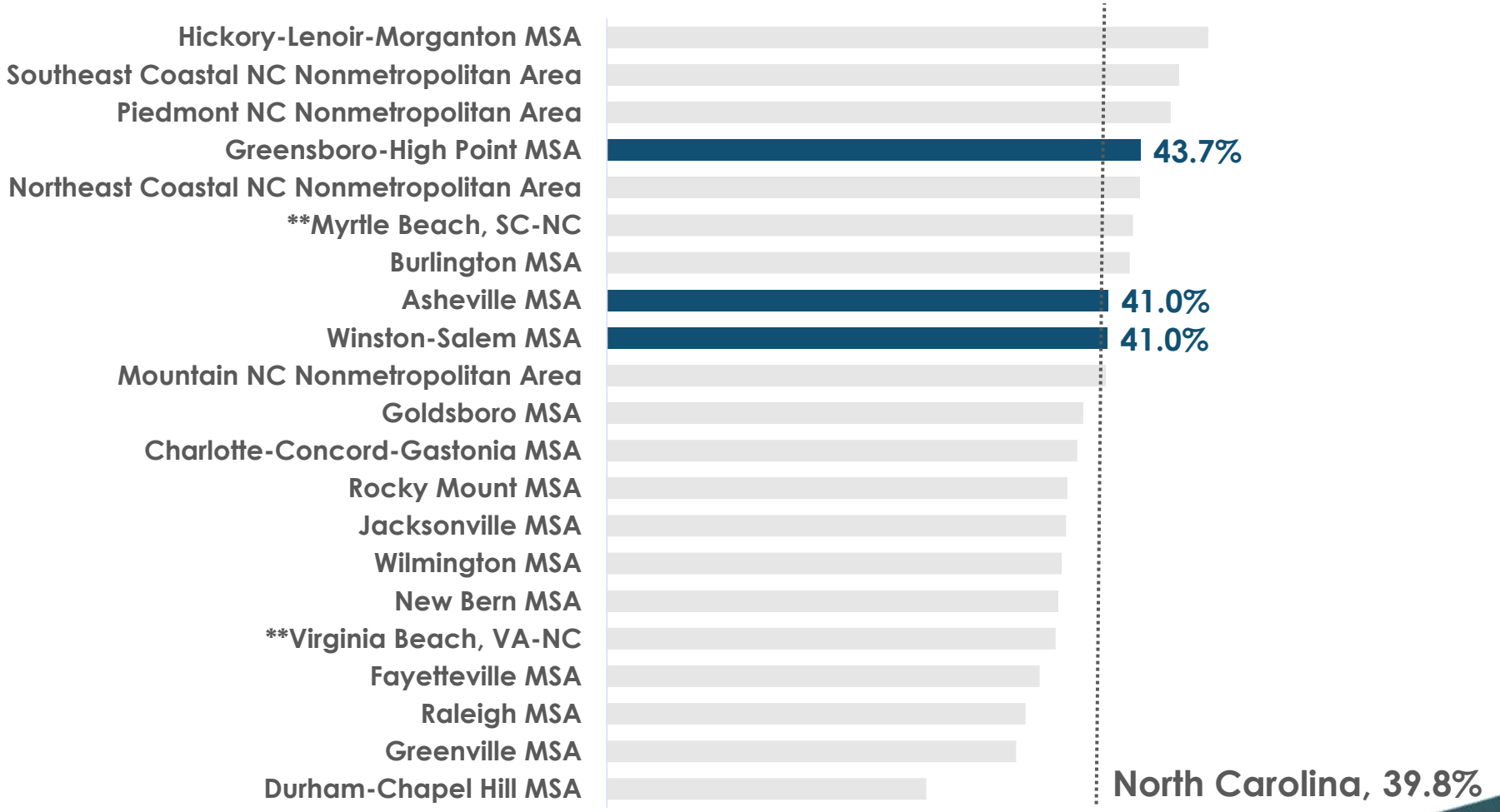


**Includes primarily non-North Carolina counties

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

5. …but some larger MSAs still face high exposure

Share of total employment in occupations with high automation exposure by MSA



**Includes primarily non-North Carolina counties

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

The missing AI factor?

- Underlying data based on status quo, historical trends
- Might not totally consider exposure of more cognitive jobs
- Recent rapid AI advancements introduce more exposure
- Full labor market impact remains unclear

How to put this research to work?

- Understand which industry workforces likely to change
- Open communication with firms in exposed industries
- Proactive vs reactive?
- Look for ways to assist those in highest exposed occupations

Up next in the series…

- Policy considerations
- Next series: Manufacturing 4.0
- Incorporating into other LEAD products?

Thank you!

Neil Harrington

neil.harrington@commerce.nc.gov

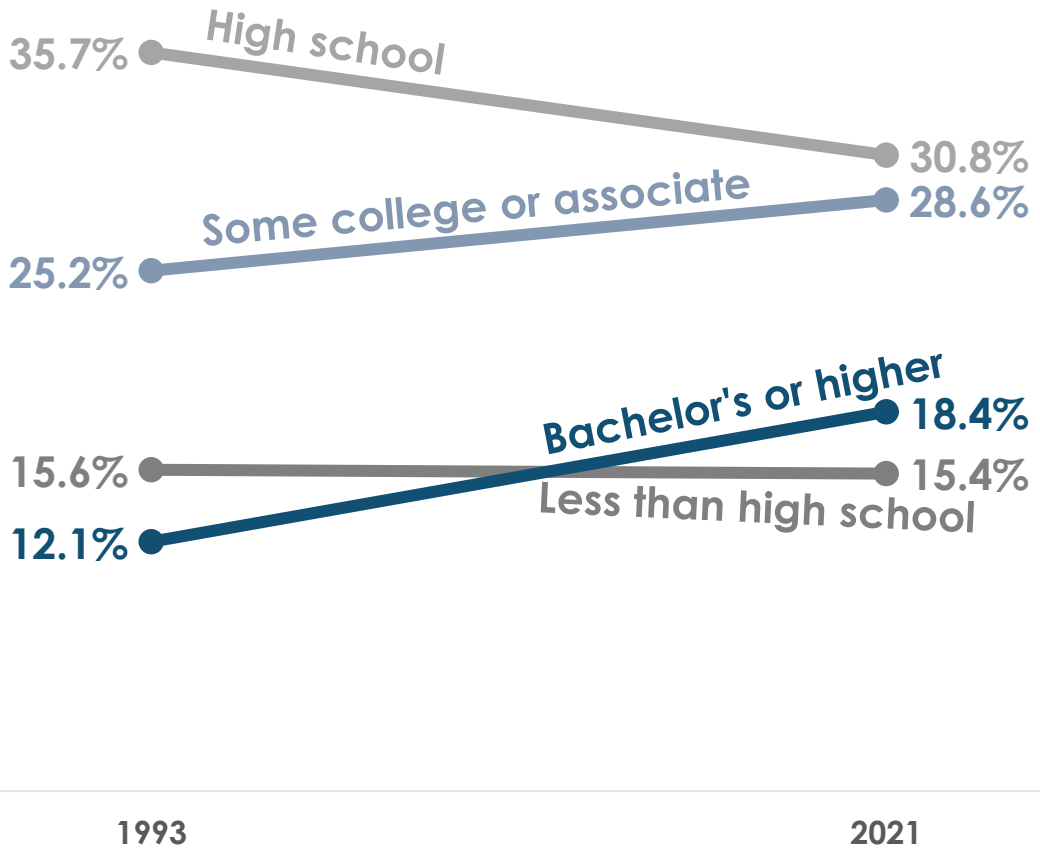
Follow us on Twitter…

@LeadNC

@CareersInNC

NC DEPARTMENT of COMMERCE
LABOR & ECONOMIC ANALYSIS

Extra Slides

Manufacturing's labor market changes since 1990s signals automation's potential impact on workforces

Share of total manufacturing employment by educational attainment, 1993 & 2021