



OFFICE OF THE STATE SUPERINTENDENT
North Carolina Department of Public Instruction

Computer Science Legislative Brief

Jamey Falkenbury
Director of Government Affairs



NC has
been a
leader!

- ▶ North Carolina has been a leader in technology and education
 - ▶ Research Triangle Park
 - ▶ World Class Universities
 - ▶ NC School Science and Mathematics x2
 - ▶ Early Colleges
 - ▶ Community Colleges (58)
- ▶ Every NC K12 Classroom Connected to High-Speed Internet
- ▶ Strong Tech Business Community Committed to Education
- ▶ Companies want to expand and move to NC
 - ▶ #3 Best State to do Business (CNBC '19)
 - ▶ #1 Best State for Business (Forbes '21)



Global Tech Impact on our Future

- ▶ Impacts from automation have thus far impacted mostly blue-collar employment; the coming wave of innovation **threatens to upend white-collar work** as well.
- ▶ Certain **highly-skilled workers will succeed wildly** in this new environment—but **far more may be displaced**, or permanent unemployment at worst.
- ▶ The 1900's **educational model is not set up to adequately prepare us** for work of the future.



North Carolina Workforce Challenges Snapshot from 2018

Economic Development/Workforce

- NC has close to 30,000 unfilled jobs that require some type of computer science
- \$1.5 billion in salaries that have been untapped

Education/Student Success

- 70+% of all jobs will require a background in CS by 2040
- 250 total teachers trained, need 2,800 more to give every child access.
- NC Falling behind other states in CS (SC, Georgia, Virginia)





A look at the fast-growing tech industry in Charlotte

Technology TRIAD BUSINESS JOURNAL
North Carolina among leaders of tech job growth in 2018

The News & Observer
Where Raleigh ranks among the nation's tech hubs, and what that means



2019
US Growth in
Tech Job
Openings

Raleigh #1
Charlotte #4

Startups
The Tech Tribune
2019 Best Tech Startups in North Carolina



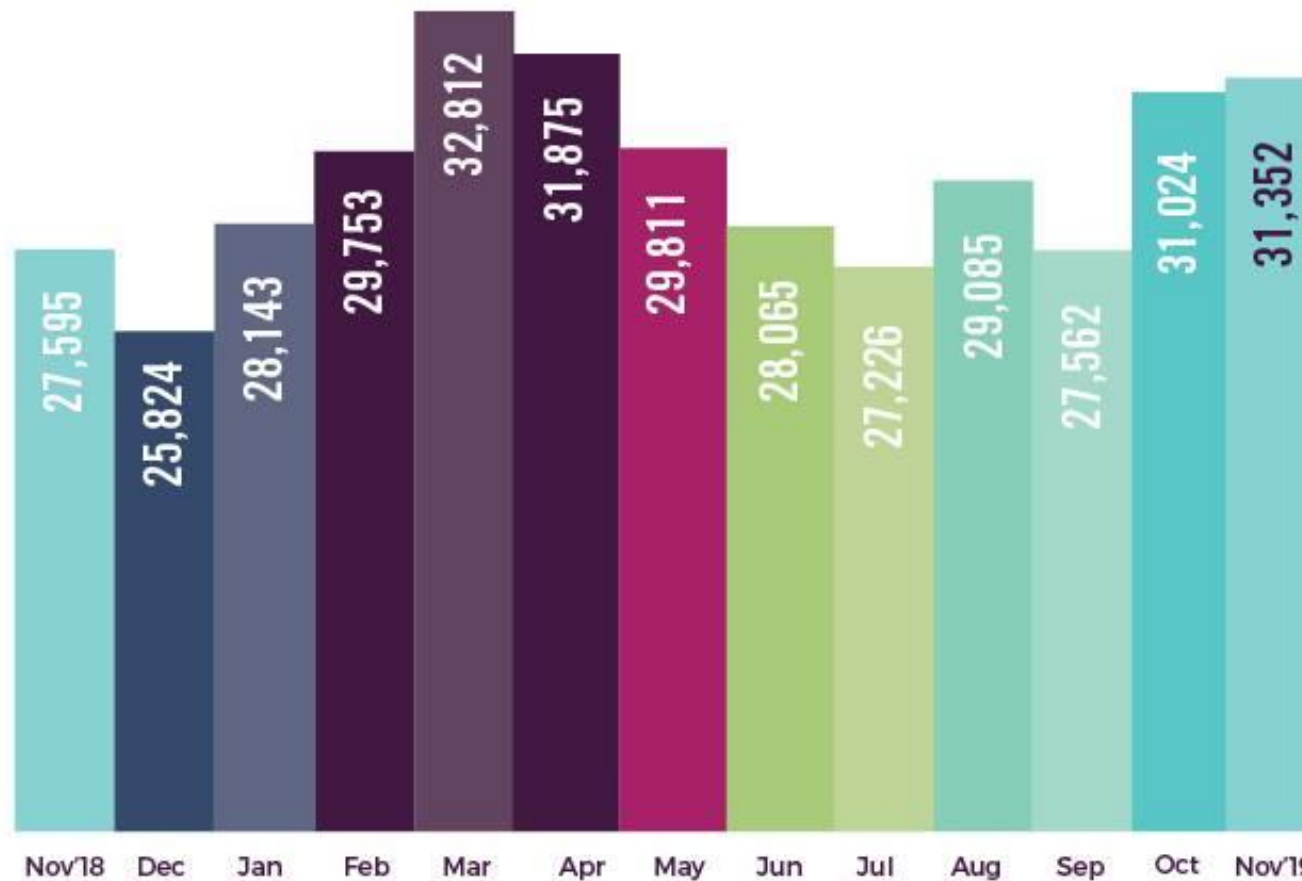
North Carolina Startups Raised More Than \$1 Billion Last Year. Here's Why Raleigh Is the Tech Industry's Best Kept Secret
North Carolina is home to a bustling epicenter for tech startups, brainy talent, and killer barbecue.



IT JOB POSTINGS / PAST 13 MONTHS



**Reporting as of 12/15/19 - Ongoing data updates/revisions may cause fluctuation in job numbers contained in previous monthly reports*



Data pulled from NC IT Job Trends Report produced by North Carolina Technology Association
919-856-0393 / nctech.org



Computer Science Timeline

June 2018:
\$500k (recurring)
in state Budget

May 2019:
CS Standards
Finished

Ramping up for
2019/20
Professional
Development

Nov. 2021: SB105
created new CS
Division at DPI &
\$2.5M for PD

PD back on
track Summer
2022 and
beyond



2017 first bill
CS for All NC
Students

December 2018:
CS Steering
Committee

Spring 2019:
CS part of
SCoS/#IAMCS

COVID stall
+ No Budget

Minecraft Grant
Feb 2022

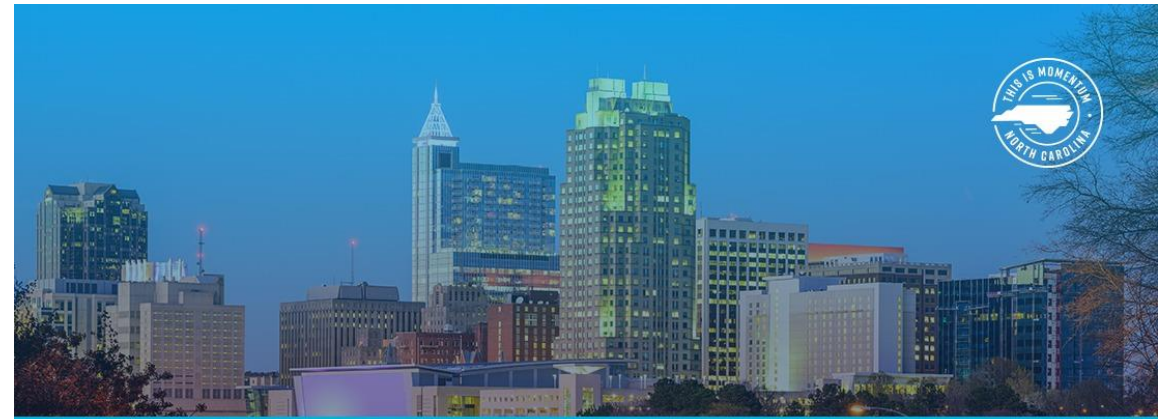
Now...

AMERICA'S **TOP STATES** FOR BUSINESS

TOP STATES FOR BUSINESS 2021

2. North Carolina

NORTH CAROLINA
Old North State



#1

BEST STATE FOR BUSINESS

OFFICE OF NORTH CAROLINA | EDPMC.COM

The List

Filter list by: **Overall** Name Spreadsheet Reprints Logo Licensing

Search by place

Rank	State	Business Costs Rank	Labor Supply Rank	Regulatory Environment Rank	Economic Climate Rank	Growth Prospects Rank	Quality of Life Rank	Population
#1	North Carolina	4	9	1	13	13	16	10,383,600



20k+ increase in unfilled jobs!

IT JOB POSTINGS / PAST 13 MONTHS



**Reporting as of 06/14/22 - Ongoing data updates/revisions may cause fluctuation in job numbers contained in previous monthly reports*

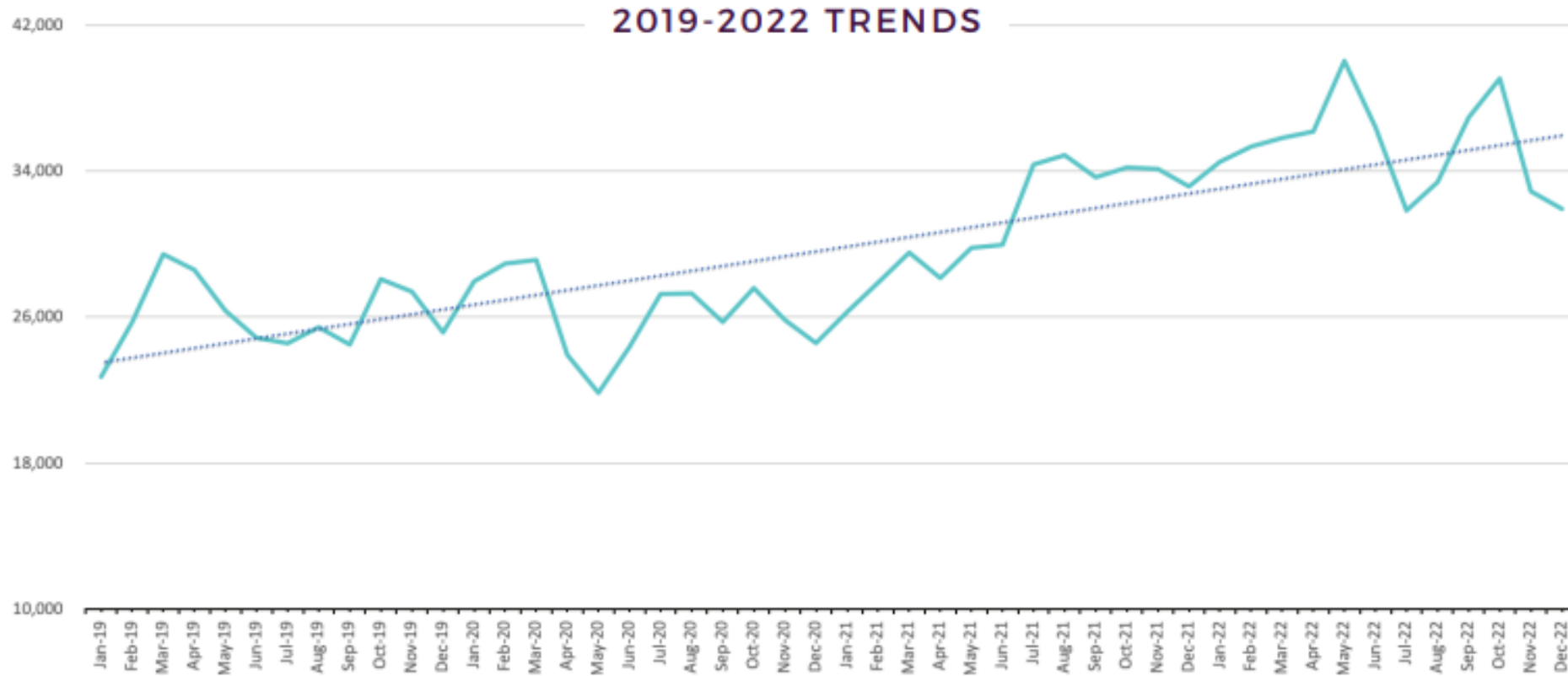


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20k+ increase in unfilled jobs!

NC IT JOB POSTINGS



https://www.nctech.org/_files/_pdf/talent/2022%20IT%20Job%20Trends%20Reports/2022-Annual-Review-IT-Job-Trends.pdf



The value of a computer science education

\$.58M

lifetime earnings of a high school graduate*



\$1.19M

lifetime earnings of a college graduate*



\$1.67M

lifetime earnings of a computer science major*



A computer science major can earn **40% more** than the college average.

*Net present value today

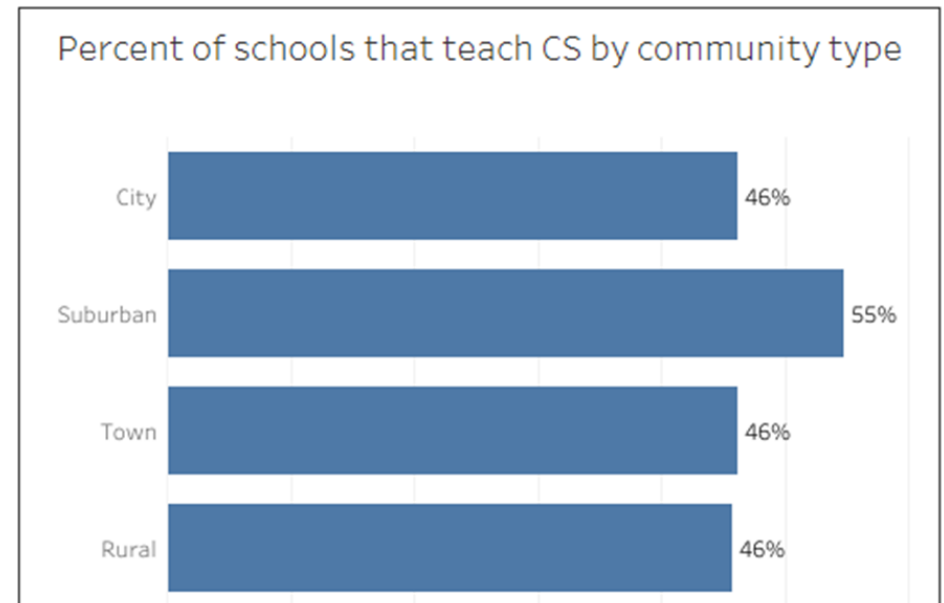
What is the current status of CS in NC?

- ▶ 2016 about **25 total teachers** in NC qualified to teach CS
- ▶ 2019/20 had **425 trained** teachers
- ▶ By the end of the 2023 Summer sessions = **1,100 teachers trained**



Statewide snapshot for Middle and High Schools

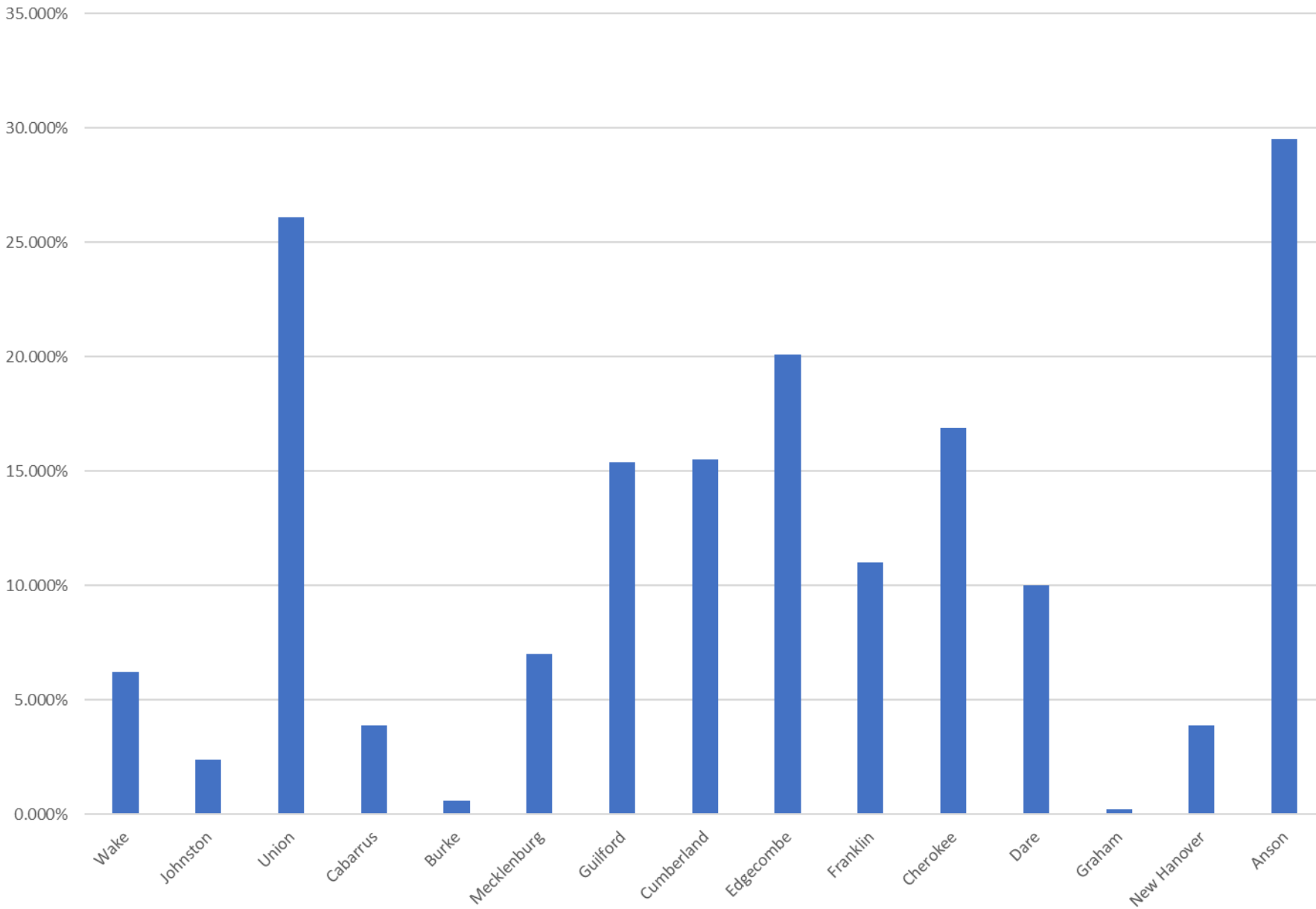
- ▶ 91% of Districts teach a CS Course
- ▶ 63% of the student population has access
- ▶ Only 47% of schools offer
 - ▶ (636 total schools)



[NC CS Dashboard v2](#) | [Tableau Public](#)



% CS Student Enrolled



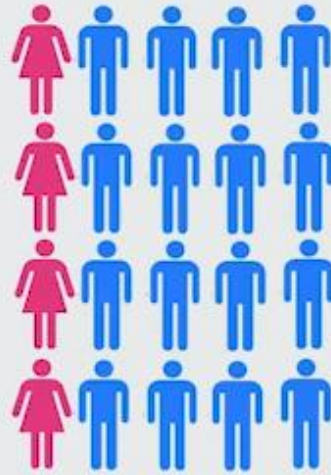
What does the research tell us?



The diversity problem starts in K-12



High school
computer
science



University
computer
science

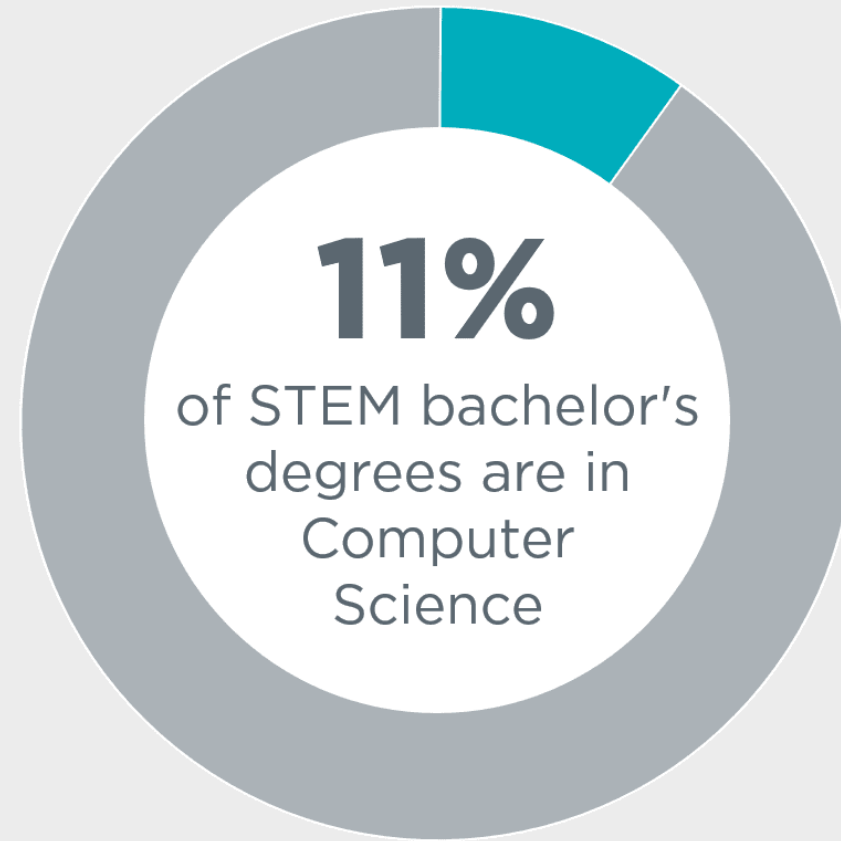
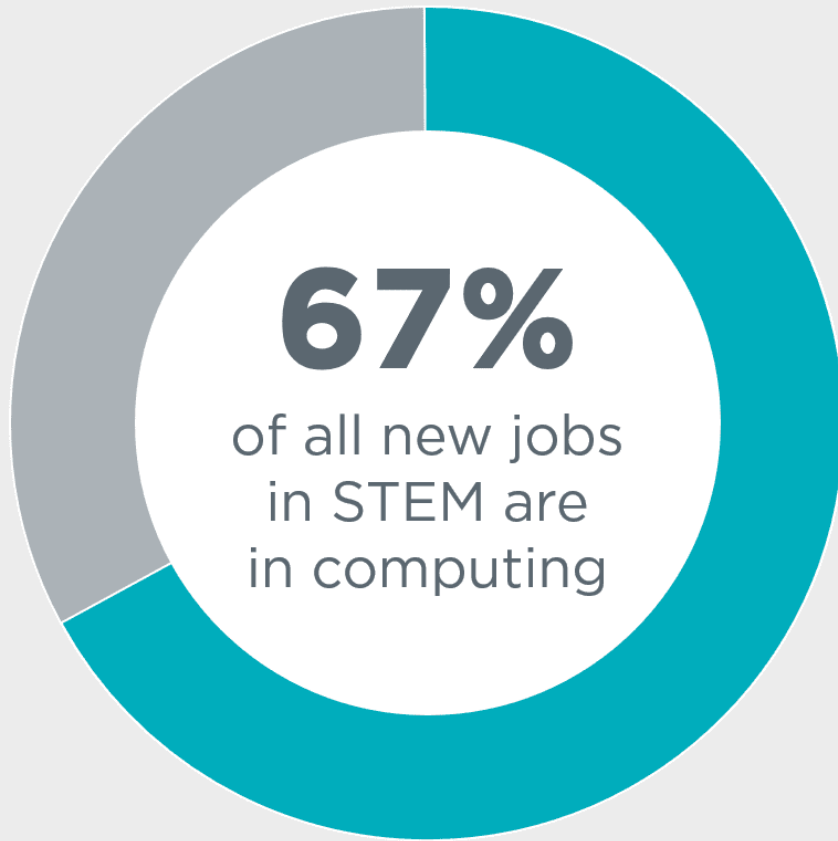


Software
workforce

Women who try AP Computer Science in high school are ten times more likely to major in it in college, and Black and Hispanic students are seven times more likely.

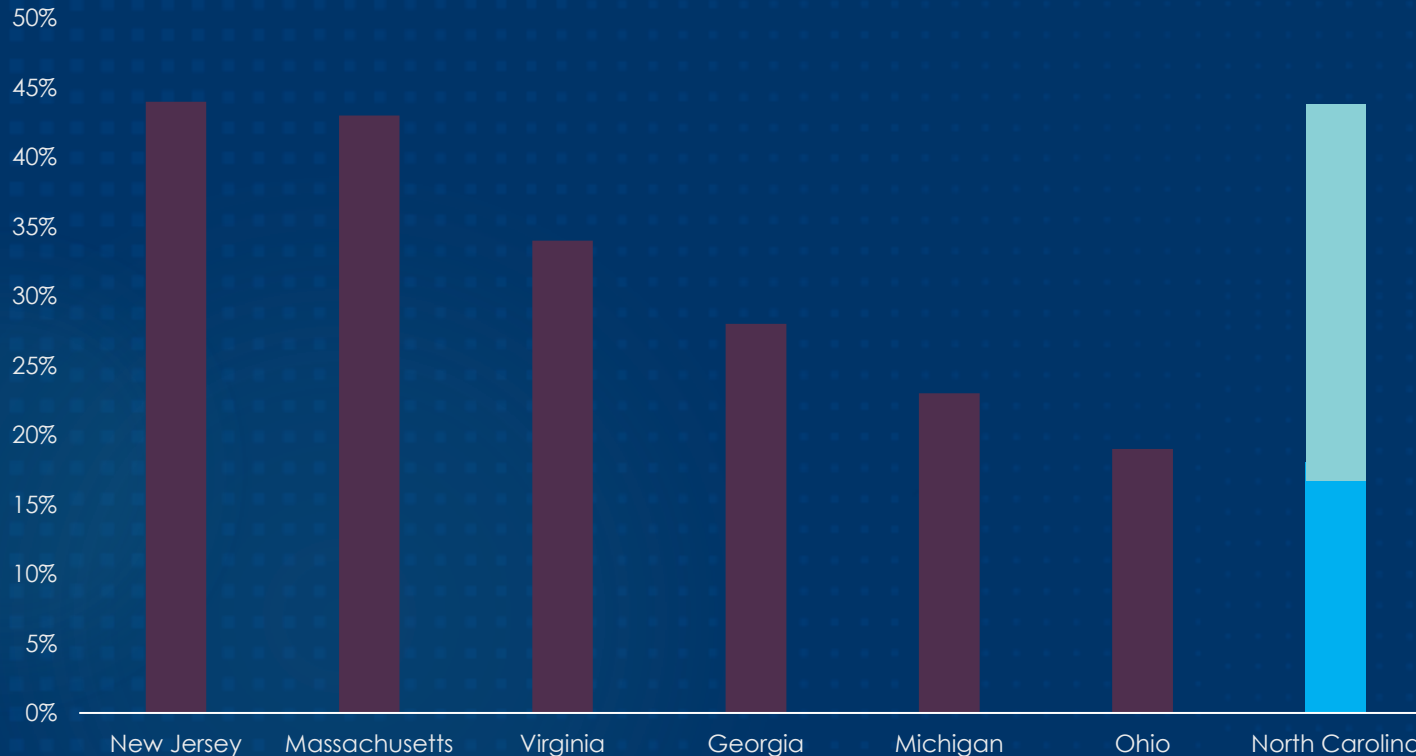


The “STEM” problem is in computer science



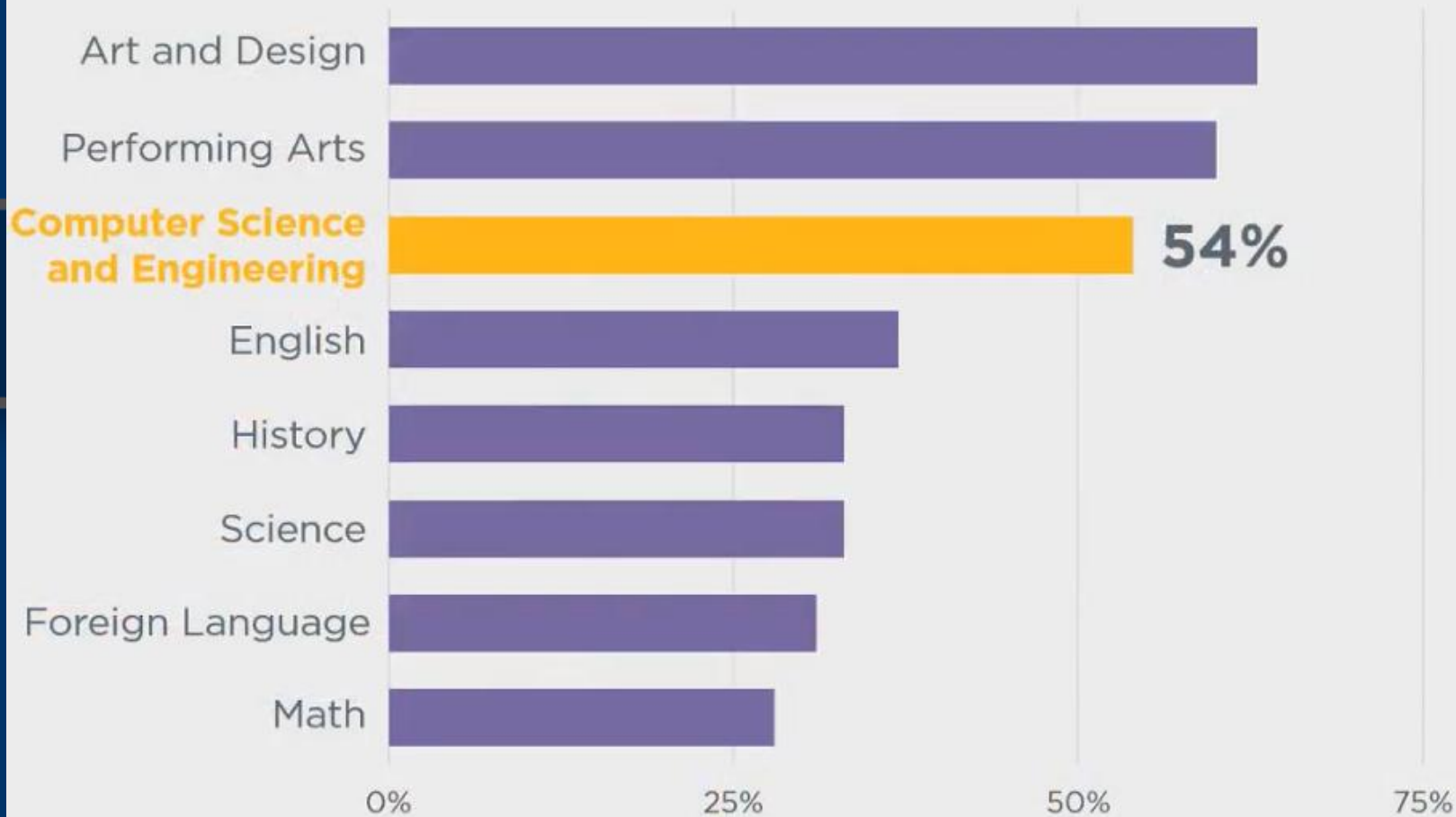
Are more students taking CS now?

% of HS offering AP CS 2018/19



- Now with increased funding, in 2022, **more than 50% of our districts (58 LEAs)** now offer at least one AP CS Course
- Training and professional development are working when funded.

What subjects do students like “a lot”?

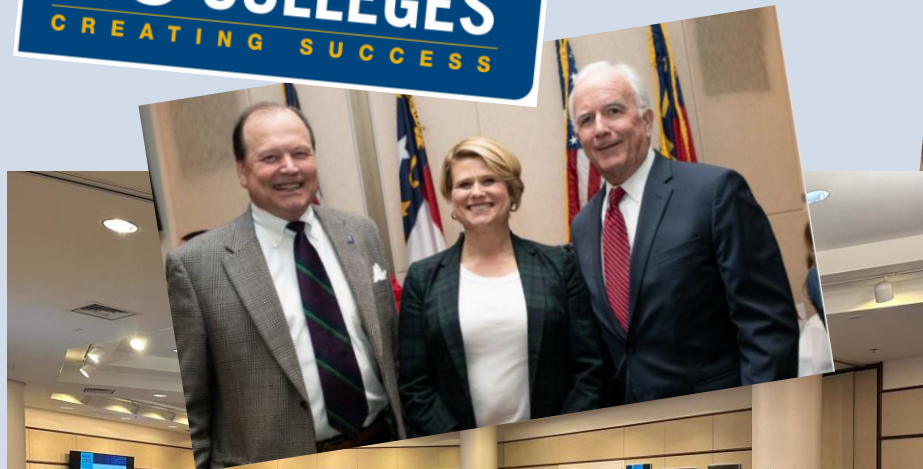


Students enjoy **computer science** and the arts **the most!**

CS Ed Week December 5-11, 2022

NCTECH
Association

NC COMMUNITY COLLEGES
CREATING SUCCESS



Hour of Code



#IAMCS



#iamCS

LAUNCH EVENT

Thursday, October 24, 2019

Join us as we celebrate the official launch of the #IAMCS campaign by highlighting gender, equity, & Computer Science opportunities in NC!

10AM | SANDY GROVE MIDDLE
300 CHASON ROAD
LUMBER BRIDGE, NC 28357



Welcome, from the...

#IAMCS

Summit 2022
Student Team



SPARK • INNOVATE • EMPOWER



Coding in Minecraft Grant

- ▶ Gives every middle school student in North Carolina an equal opportunity to engage in computer science and achieve credentials aligned to the North Carolina Computer Science Standards, starting pathways to Career and Technical Education, other industry certifications and employment opportunities
- ▶ This program has the potential to reach nearly 340,000 students and more than 14,000 educators

NewsWires ^{EIN}

NCDPI Partners with Microsoft & Prodigy Learning to Offer 'Coding in Minecraft' to Middle School Students



ESSER & GA Provisions – CS/STEM Related



Coding & Mobile App
Development Grant



Recommendations

- ▶ Require Computer Science to count as a “Science Credit”
- ▶ Require Middle Schools to offer exploratory CS courses
- ▶ Provide enough “runway” for districts to get this done right
- ▶ Continue to fund stipends and PD dollars for CS
- ▶ Continue to fund CS/STEM related grants/programs



QUESTIONS?

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Office of State Superintendent Truitt

