

# NICE Webinar Series

NATIONAL INITIATIVE FOR **CYBERSECURITY** EDUCATION



Understanding Interventions that Broaden Underrepresented Minority Participation in Cybersecurity Careers

September 18, 2019

# Understanding Interventions that Broaden Underrepresented Minority Participation in Cybersecurity Careers

Claudia Morrell, CEO  
Greg Hodges, COO

September 18, 2019

**STEM EQUITY**  

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**INITIATIVE**

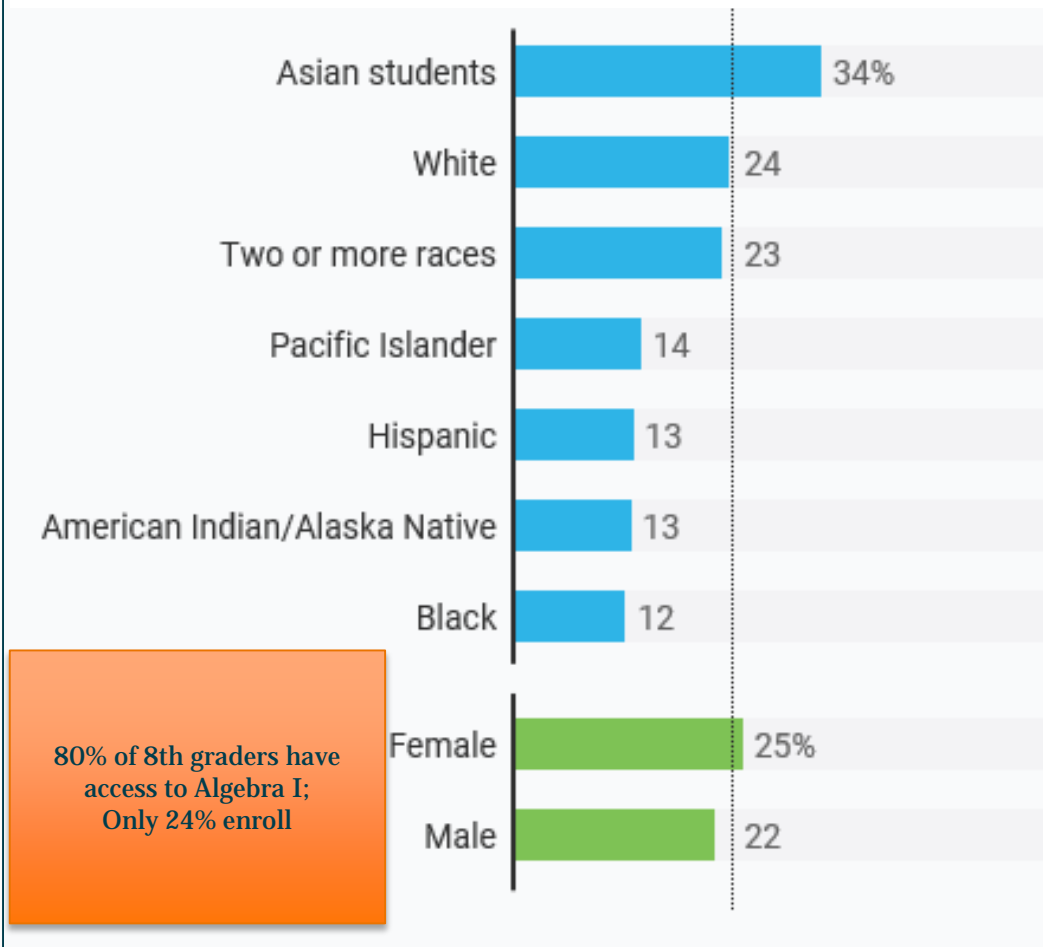
# Goal of today's webinar

- Why diversity hiring matters
- Effective instructional strategies
- Proven strategies to broaden underrepresented minority participation in cybersecurity and other related fields
- Examples of successful diversity hiring practices

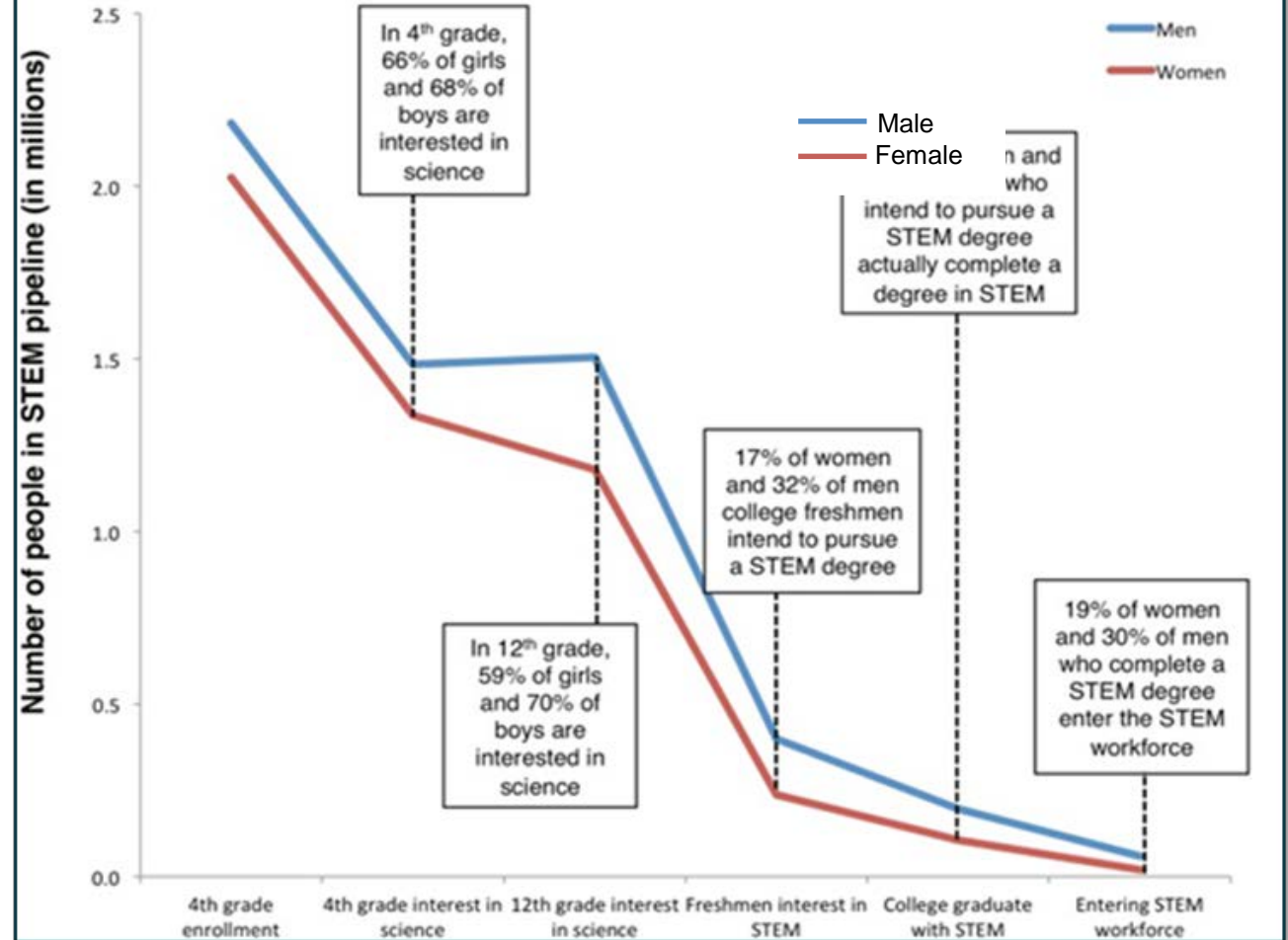
# POLL

# The STEM /Cybersecurity Pipeline

Percent of 8<sup>th</sup> graders enrolled in Algebra I by demographic



Interest and Participation in STEM Pipeline Over Time



# Traditional Educational Approach



**EQUALITY**



**EQUITY**

# Equitable Learning Environments



EQUITABLE LEARNING ENVIRONMENT



WORKPLACE EQUALITY

ELEs remove systemic barriers to learning so all students are recognized as valuable assets in school and in the workforce

# A New Model for STEM Education: NEIR Model for ELEs

- ***Student asset model***
- ***Intersectional approach***
- ***Sustainable practice***
- ***Research & practice + engineering & business***
- ***Expertise similar to the requirements of cybersecurity education!***



# Key Indicators (NEIR) for Building Equitable Learning Environments

*Normalizing*

*Empowering*

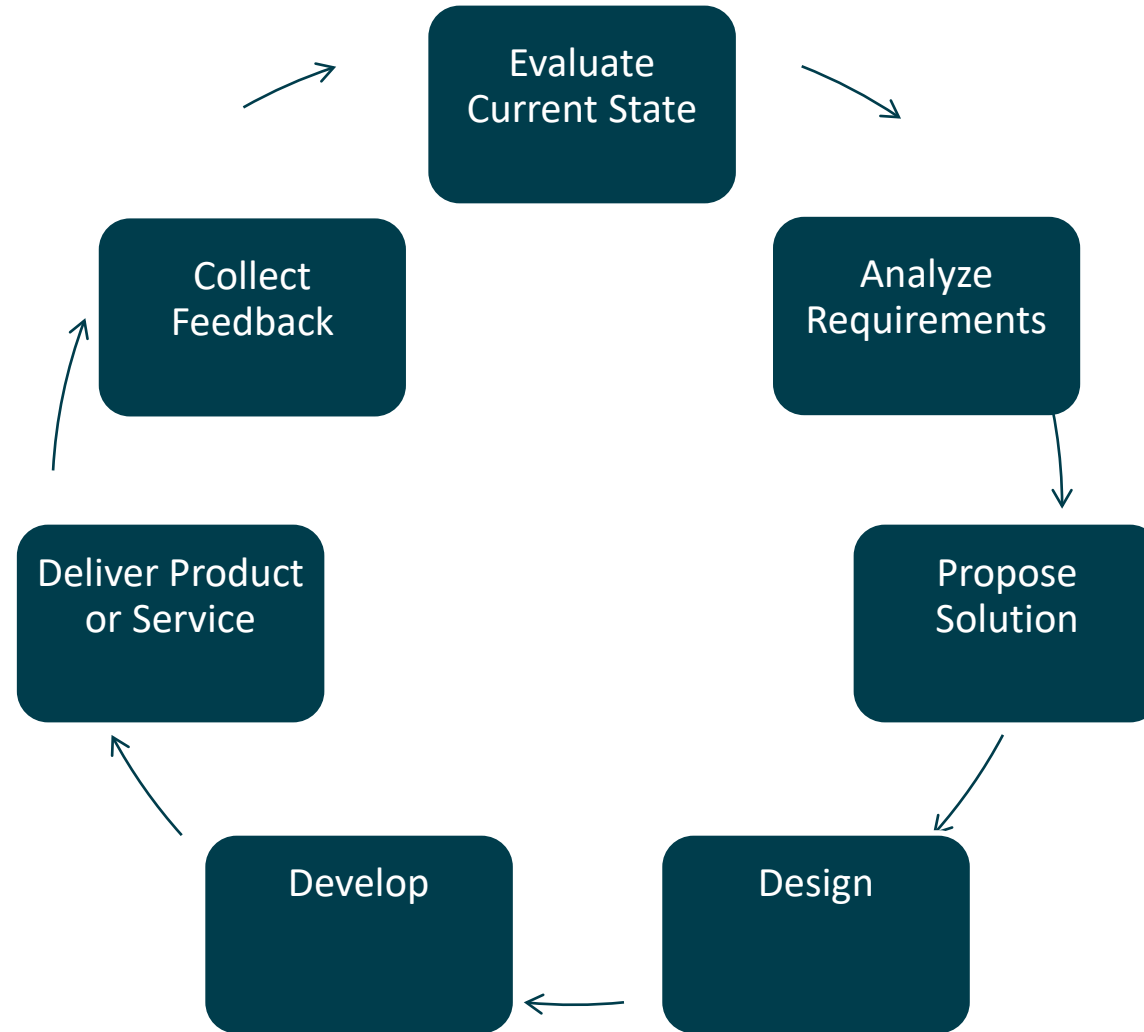


*Relevant*

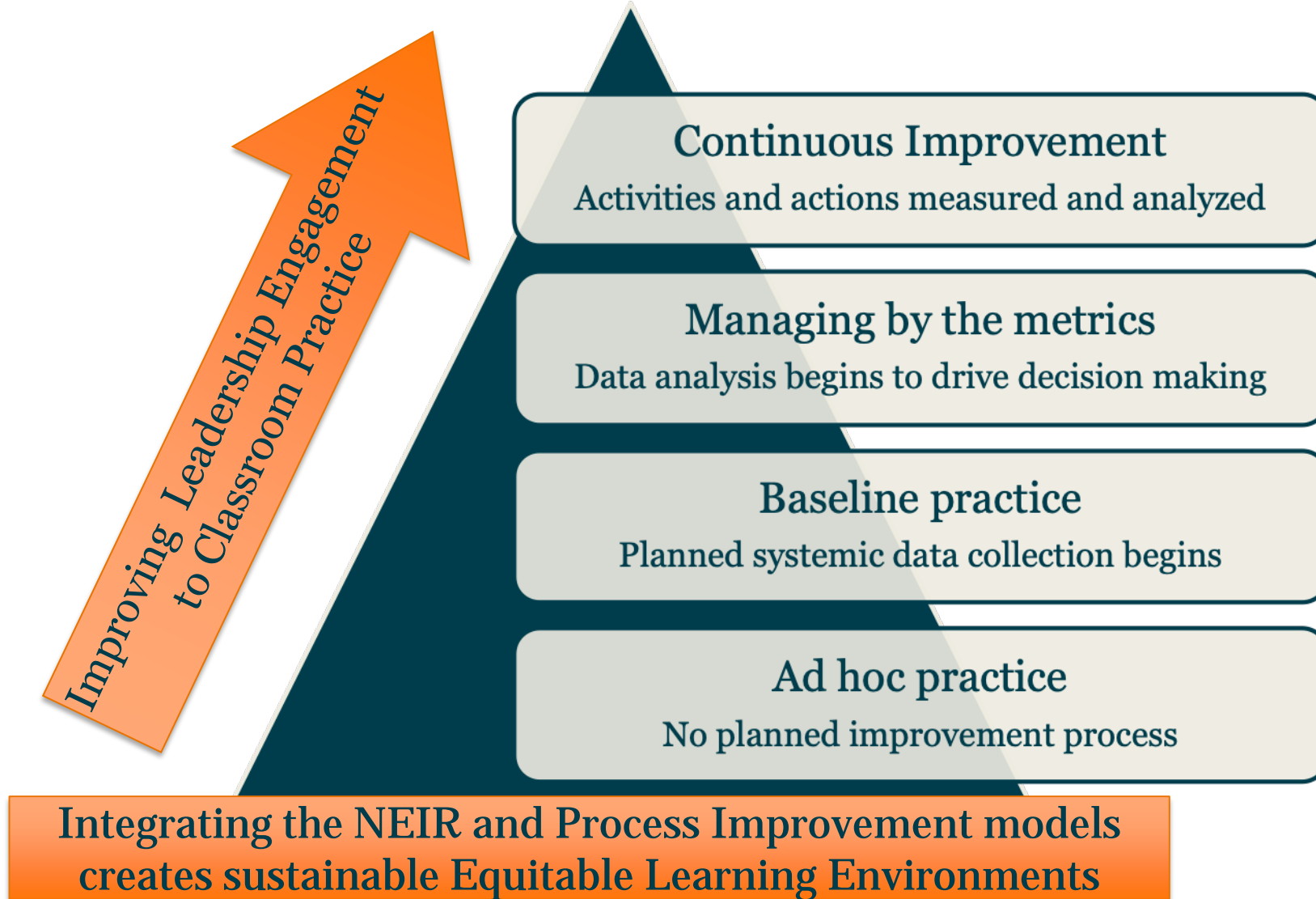
*Inclusive*

# POLL

# Program Improvement Process Builds on a Comprehensive Needs Assessment



# Systemic Change Requires Effective Process



# Examples of 2018-2019 Implemented Strategies to Broaden Participation

Normalizing Empowering Inclusive Relevant



**DARE to be great!**  
FEARLESSLY FOLLOW YOUR INTERESTS

CAREER AND TECHNICAL EDUCATION

Technical or applied associate's degree holders offers out earn bachelor's degree holders.

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**TALENTS** unfolding

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Funded by the Bureau of Career and Technical Education, Pennsylvania Department of Education

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<https://stemequityinitiative.org>

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# Questions?

## Thank You!

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# **“Diversity in the Cybersecurity Workforce”**

*Making a case for it and finding a solution*

**By Tony Marshall**  
**President and CEO**

**September 18, 2019**

# Why is Diversity Important?

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- IT is done in teams
- A diverse team yields a superior outcome
- A Team of the G.O.A.T. could never beat a diverse team
- Currently, our cybersecurity teams are not as diverse as they could be
- **But there is a solution !!!!!**



# POLL

# The Cybersecurity Talent Gap

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- The shortage of trained cybersecurity professionals is well documented
- The US talent shortage has nearly doubled since 2013 and is growing three times as fast as the shortage for other IT roles
- It's going to get worse before it gets better
- **There is a solution !!!!!**

# Life is a Math problem

- Over 60 Million people in this country do not have access to the internet
- Most of the effected communities are in Urban and Rural communities
- These communities tend to be overwhelmingly Black and Brown
- Many of our poor performing schools have very little tech exposure
- Even when we get women in IT related professions the attrition rate is too high
  
- **There is a solution !!!!!!!**

# Cybersecurity is different

- You can't "Fake it until you Make it"
- Developing a Cybersecurity Professional is like training a Pilot
- Three step process:
  - - Education
  - - Training
  - - Experience
- You need all 3 before you get started
- **So what is the solution????**

# “Apprenticeship”

- A Registered Apprenticeship = a defined set of steps put in place to develop a single or multiple novices into seasoned professionals.
- To develop a Cybersecurity professional you need.
  - 1) Knowledge - The attainment of an education
  - 2) Training - The attainment of a set of skills
  - 3) Experience - The practical application of knowledge and skills over time
- ISG-CAP is a carefully coordinated program, designed to systematically develop carefully selected military veterans into cybersecurity professionals.



# Case Study on ISG-CAP

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To get a copy of the Case Study

Text  
ISGCAP  
to 44222

“The Cybersecurity Apprenticeship Program (ISG-CAP) combines Education, Virtual Simulation Training and work experience to produce certified, trained, validated and experienced cybersecurity professionals.”



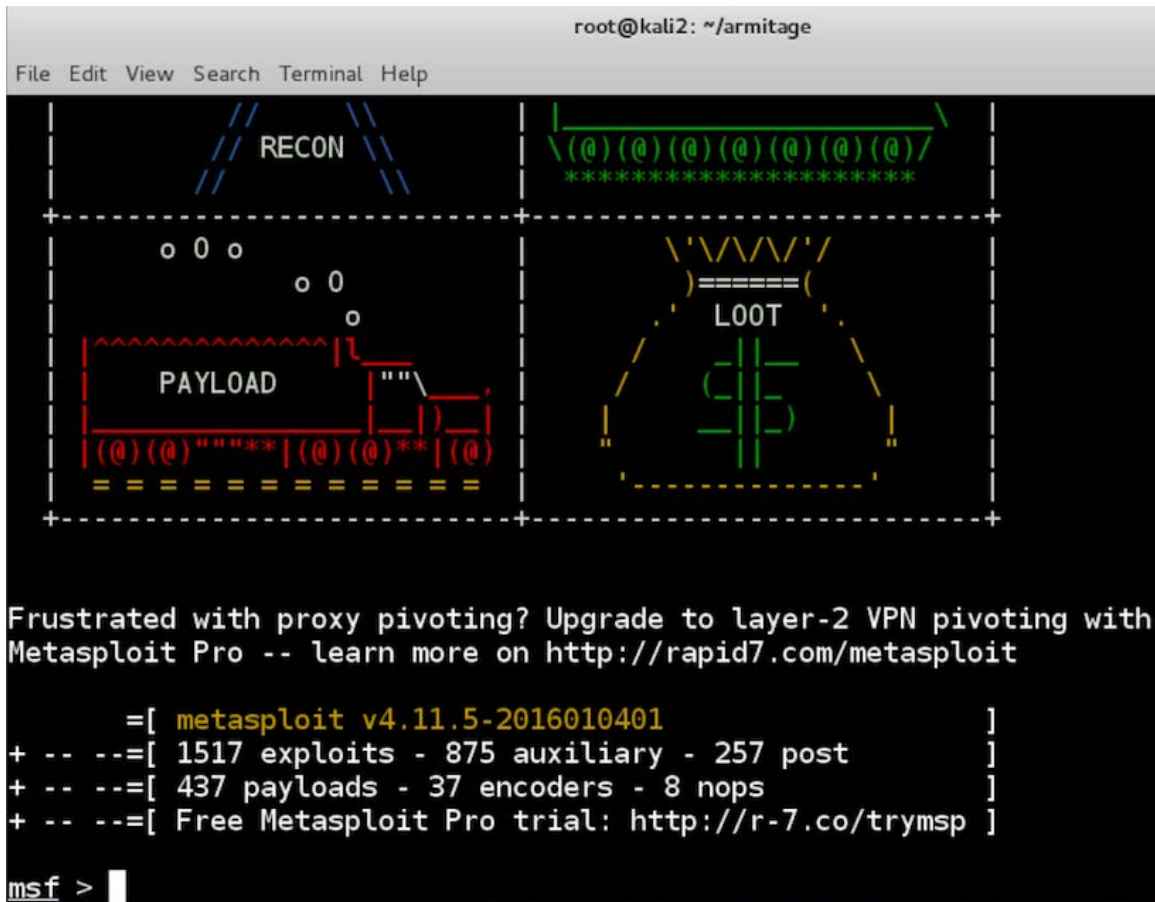
# ISG-CAP Apprentice Cohort I Open House





# Conclusion

- ISG conducted a pilot with the state of NC
- The ISG-CAP pilot was highly successful
- The state of NC (Our Client) has significantly expanded the program
- To date, 90% apprentices have completed the program
- All apprentices required to complete their CISSP certification
- ISG-CAP is the most efficient way to develop proven Cybersecurity talent
  - **ISG-CAP Works!!!**



## ISG

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# Q & A

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