Webinar Series

Understanding Interventions that Broaden Underrepresented Minority Participation in Cybersecurity Careers

September 18, 2019
Understanding Interventions that Broaden Underrepresented Minority Participation in Cybersecurity Careers

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Greg Hodges, COO

September 18, 2019

The STEM Equity Initiative, Inc. is a 501 (c)(3) Corporation
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 8th graders enrolled in Algebra I by demographic

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian students</td>
<td>34%</td>
</tr>
<tr>
<td>White</td>
<td>24</td>
</tr>
<tr>
<td>Two or more races</td>
<td>23</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>14</td>
</tr>
<tr>
<td>Hispanic</td>
<td>13</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>13</td>
</tr>
<tr>
<td>Black</td>
<td>12</td>
</tr>
</tbody>
</table>

80% of 8th graders have access to Algebra I; Only 24% enroll

Interest and Participation in STEM Pipeline Over Time

- In 4th grade, 66% of girls and 68% of boys are interested in science.
- Women and men who intend to pursue a STEM degree actually complete a degree in STEM.
- 17% of women and 32% of men college freshmen intend to pursue a STEM degree.
- In 12th grade, 59% of girls and 70% of boys are interested in science.
- 19% of women and 30% of men who complete a STEM degree enter the STEM workforce.
Traditional Educational Approach
Equitable Learning Environments

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

Evaluate Current State

Collect Feedback

Analyze Requirements

Propose Solution

Deliver Product or Service

Develop

Design

Collect Feedback → Evaluate Current State → Analyze Requirements → Propose Solution → Deliver Product or Service → Develop → Design → Collect Feedback

STEM EQUITY INITIATIVE
Systemic Change Requires Effective Process

Integrating the NEIR and Process Improvement models creates sustainable Equitable Learning Environments

- Continuous Improvement
  Activities and actions measured and analyzed

- Managing by the metrics
  Data analysis begins to drive decision making

- Baseline practice
  Planned systemic data collection begins

- Ad hoc practice
  No planned improvement process

Improving Leadership Engagement to Classroom Practice
Examples of 2018-2019 Implemented Strategies to Broaden Participation

Normalizing  Empowering  Inclusive  Relevant

https://stemequityinitiative.org
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?

- 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

- 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 affected 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????
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

To get a copy of the Case Study

Text
ISGCAP
to 44222
ISG Cybersecurity Apprenticeship Program

“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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