



AIR FORCE ASSOCIATION'S

# CYBERPATRIOT

NATIONAL YOUTH CYBER EDUCATION PROGRAM



## CyberPatriot Survey Results

- *CyberPatriot VI Post-Season Competitor Survey*
- *CyberPatriot Student Alumni Survey*

[www.uscyberpatriot.org](http://www.uscyberpatriot.org)

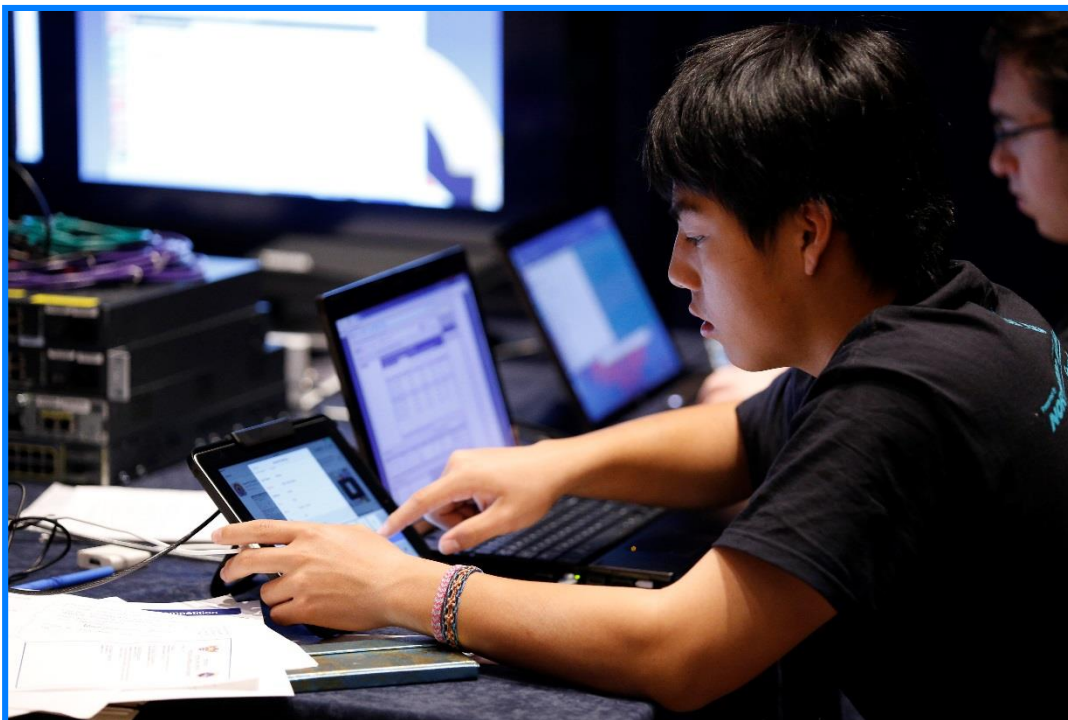




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NATIONAL YOUTH CYBER EDUCATION PROGRAM



## CyberPatriot VI Post-Season Competitor Survey

2013-2014

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## **SURVEY DESIGN**

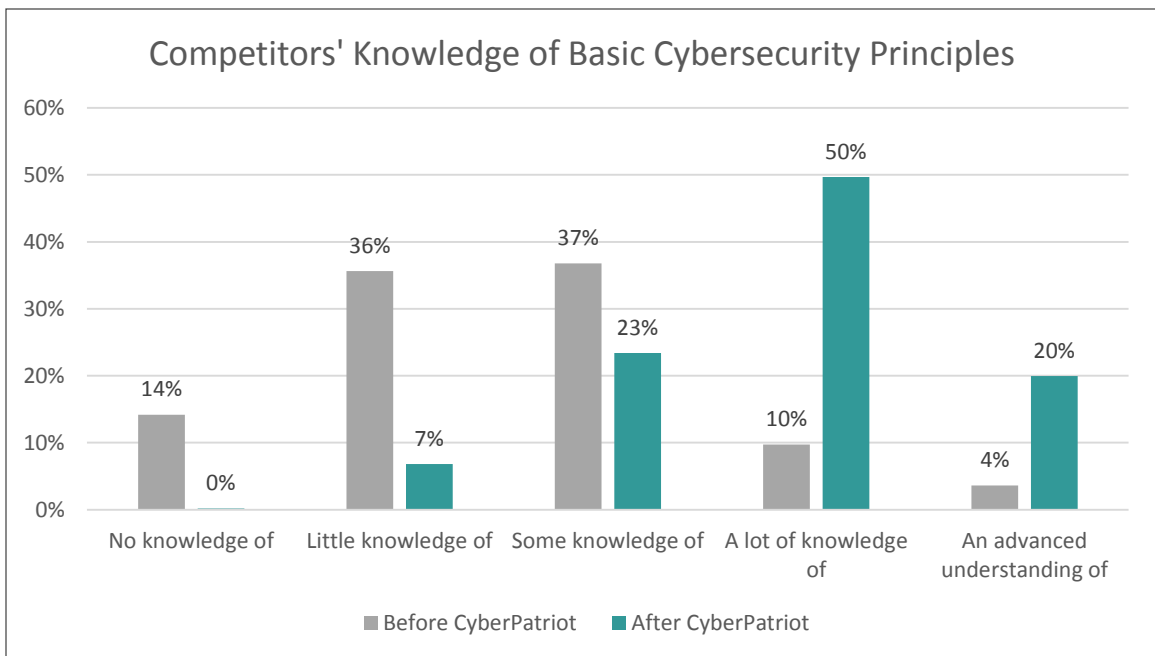
During May 2014, student participants in the CyberPatriot VI season of competition were surveyed in seven areas as follows:

1. Their knowledge of cybersecurity principles pre- and post- CyberPatriot participation
2. Their knowledge of cybersecurity career opportunities pre-and post- CyberPatriot participation
3. Their likelihood pre- and post- CyberPatriot participation of pursuing a STEM education or career
4. Their likelihood pre- and post-CyberPatriot participation of pursuing an education or career in cybersecurity
5. Their perception pre- and post-CyberPatriot participation of the degree to which they perceive females are welcomed to the cybersecurity career field
6. The degree to which they assessed the CyberPatriot competition as being engaging
7. The degree to which they assessed the CyberPatriot competition as being fun

641 students responded to the survey (n=641).

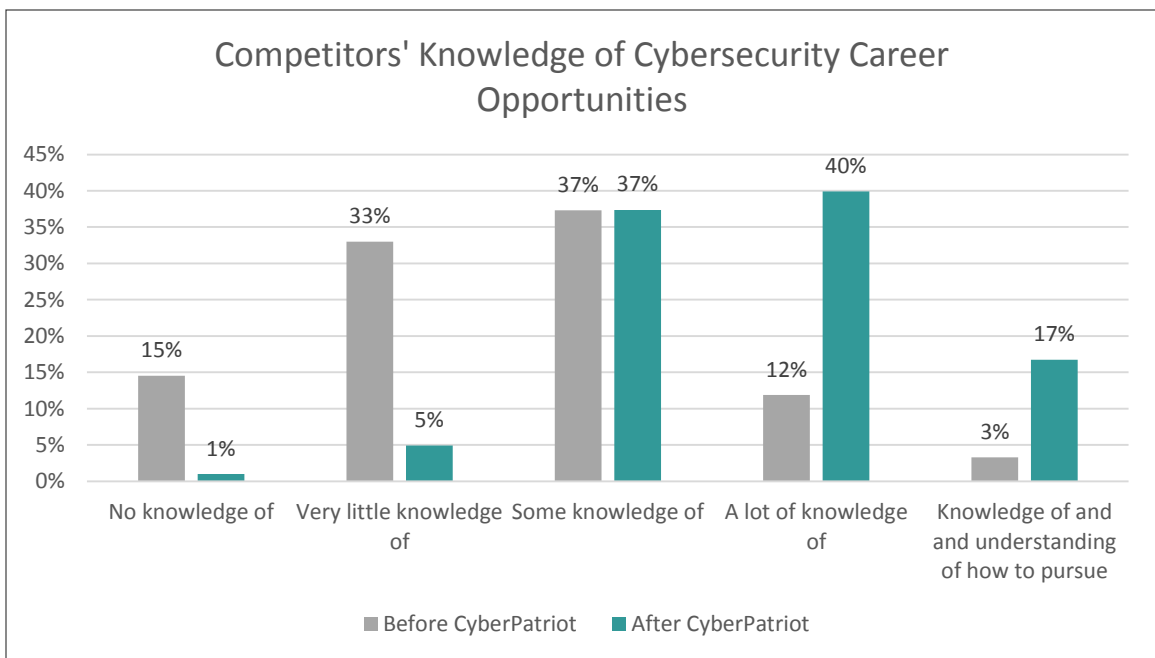
## KNOWLEDGE OF CYBERSECURITY PRINCIPLES

The vast majority of the 641 respondents characterized their pre-CyberPatriot knowledge of cybersecurity principles as poor. 87% of respondents characterized their pre-CP experience as “No knowledge,” “Limited knowledge,” or “Some knowledge.” However, the students assessed their post-CP far stronger, with fully 93% assessing themselves as having an “Advanced understanding of” (20%), “A lot of knowledge” (50%), or “Some knowledge” (23%) of cybersecurity principles.



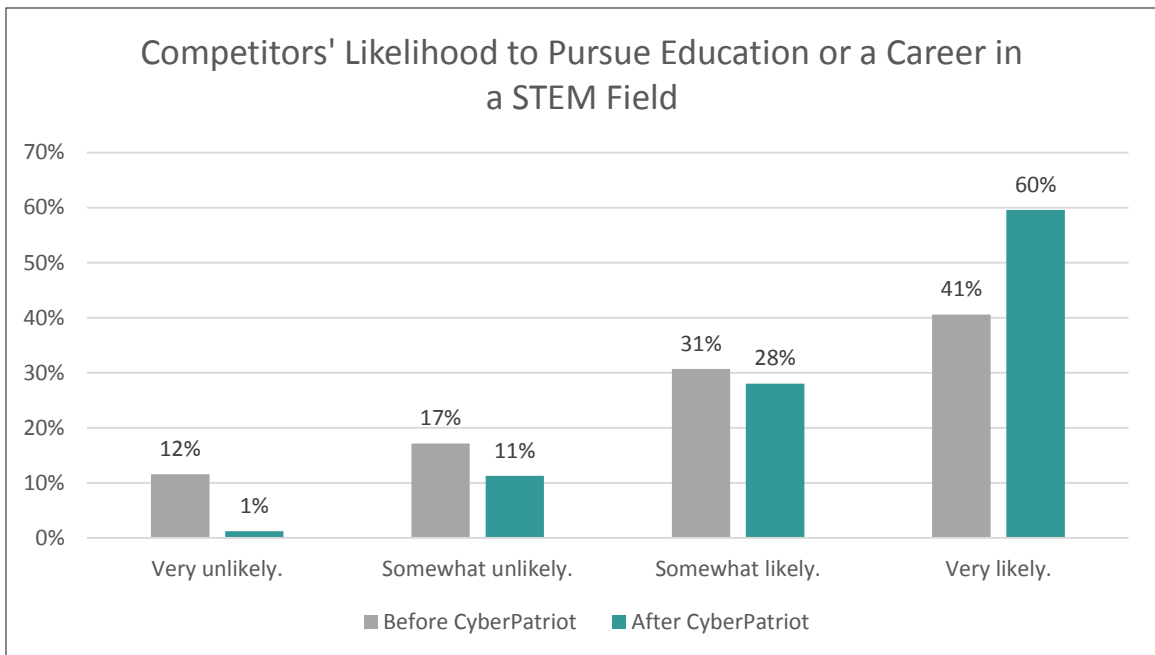
## KNOWLEDGE OF CYBERSECURITY CAREER OPPORTUNITIES

Students assessed their knowledge of cybersecurity career opportunities as markedly improved by their CP experience. While 85% of respondents said their pre-CP-VI understanding represented “No knowledge” (15%), “Very little knowledge” (33%), or “Some knowledge” of cybersecurity career opportunities, post CP-VI the numbers skewed strongly in a favorable direction. After their season of CyberPatriot, fully 94% believed they now had “Some,” (37%) “A lot” (40%), or strong knowledge and understanding of cybersecurity careers (17%).



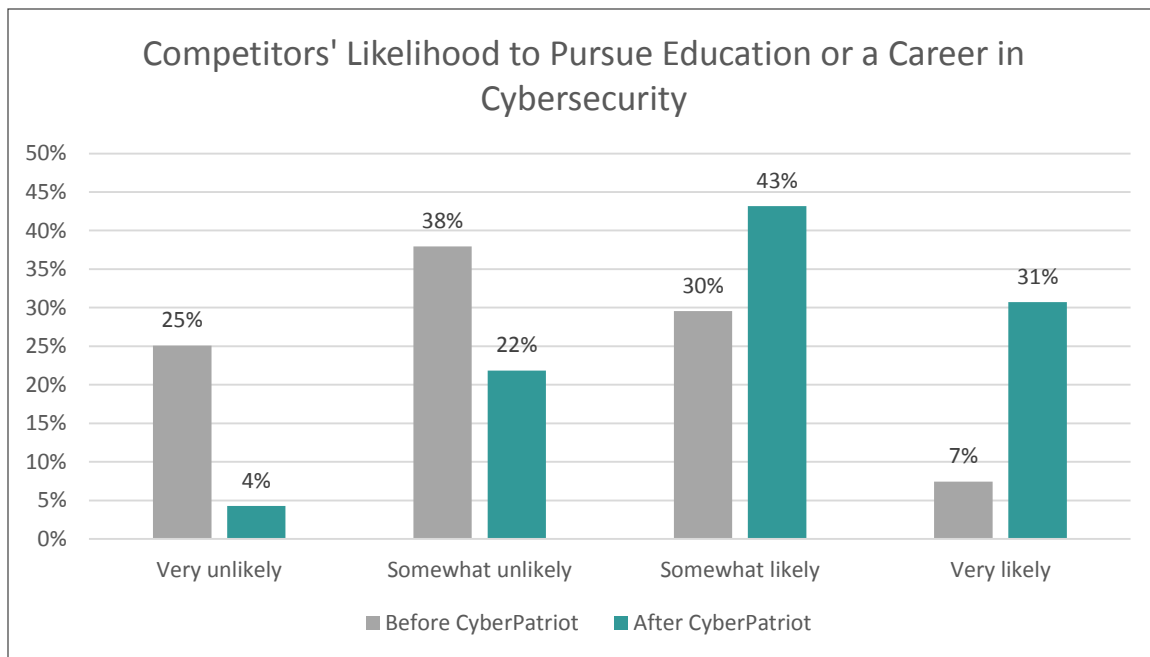
## LIKELIHOOD TO PURSUE STEM EDUCATION OR CAREERS

Students' assessment of their likelihood to pursue STEM education and careers was dramatically increased by their CyberPatriot experience. Prior to their CP experience, 68% of respondents said they were either "Somewhat likely" (31%), "Somewhat unlikely" (17%) or "Very unlikely" (12%) to pursue education or careers in STEM. After their CyberPatriot experience, fully 88% said they were "Somewhat likely" (28%) or "Very likely" (60%) to do so. Most notably, the "Very unlikely" characterization to pursue a STEM education or career dropped from 12% pre-competition to just 1% after the competition. Equally dramatic was the increase of "Very likely" responses from 41% before the CyberPatriot experience to fully 60% after CyberPatriot.



## LIKELIHOOD TO PURSUE CYBERSECURITY EDUCATION OR CAREERS

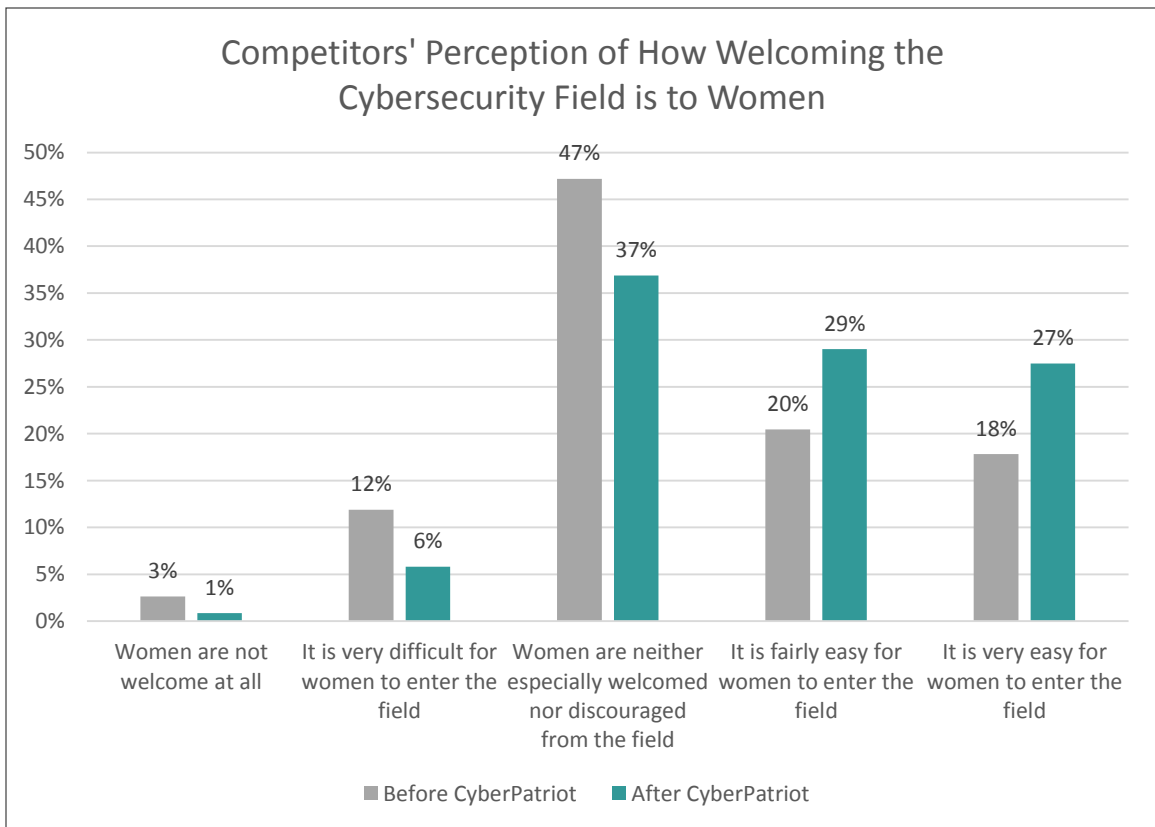
Students were also asked to compare their propensity for a cybersecurity education or career. Their inclinations to do so were profoundly affected by their participation in CyberPatriot. Prior to the CyberPatriot experience, a significant majority of students said they were generally unlikely to pursue education or careers in cybersecurity. 25% said they were “Very unlikely,” 38% said they were “Somewhat unlikely,” and 30% said they were just “Somewhat likely” to do so. After their experience with CyberPatriot, however, fully 74% of respondents said they were either “Somewhat likely” (43%) or “Very likely” (31%). Notably, the percentage of students saying they were “Very unlikely” to pursue cybersecurity dropped from 25% to just 4% when measured from pre- to post-CyberPatriot, and the number of “Very likely” respondents increased from only 7% before their CyberPatriot experience to nearly one third of respondents afterward (31%).





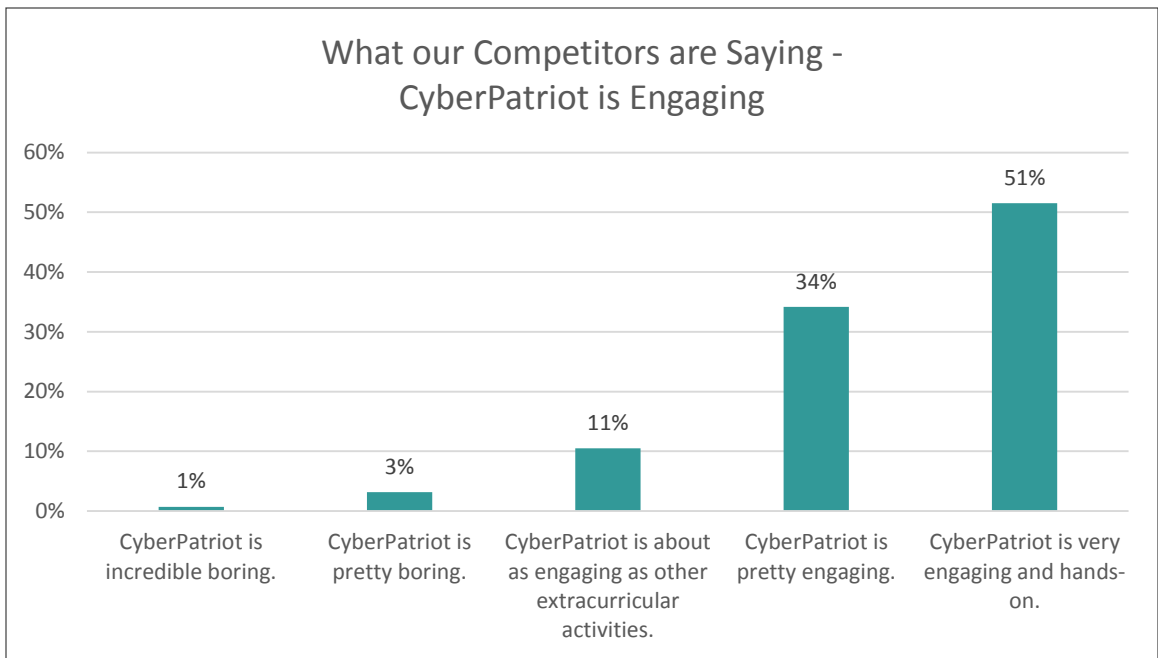
## PERCEPTION OF CYBERSECURITY FIELD BEING WELCOMING TO FEMALES

Student perceptions of how welcoming cybersecurity is to women were substantially shaped by CyberPatriot. While the majority of respondents believed the field was not welcoming, had barriers to entry for females, or was neutral to women before they experienced CyberPatriot, after the CyberPatriot experience, nearly all (93%) saw the field as neutral, easy to enter, or very easy to enter for women.



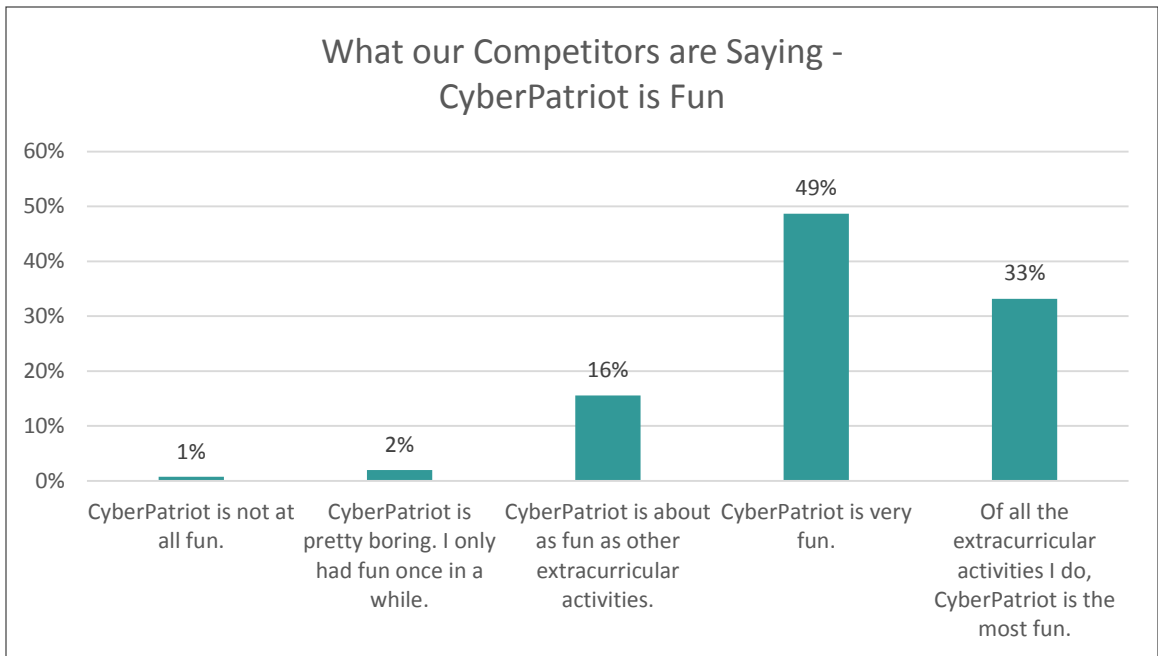
## PERCEPTION OF THE DEGREE TO WHICH CYBERPATRIOT IS “ENGAGING”

Students were asked if CyberPatriot was engaging, that is, if it is an activity that draws and keeps their attention. 85% Of respondents said it was “Pretty engaging” (34%) or “Very engaging” (51%). Only 4% found it “boring.”



## PERCEPTION OF THE DEGREE TO WHICH CYBERPATRIOT IS “FUN”

Students were asked whether CyberPatriot was enjoyable or fun. Remarkably, 49% said it was “Very fun,” and fully one third (33%) of the respondents said that when considering all the extracurricular activities in which they had participated, CyberPatriot was the most fun of all.

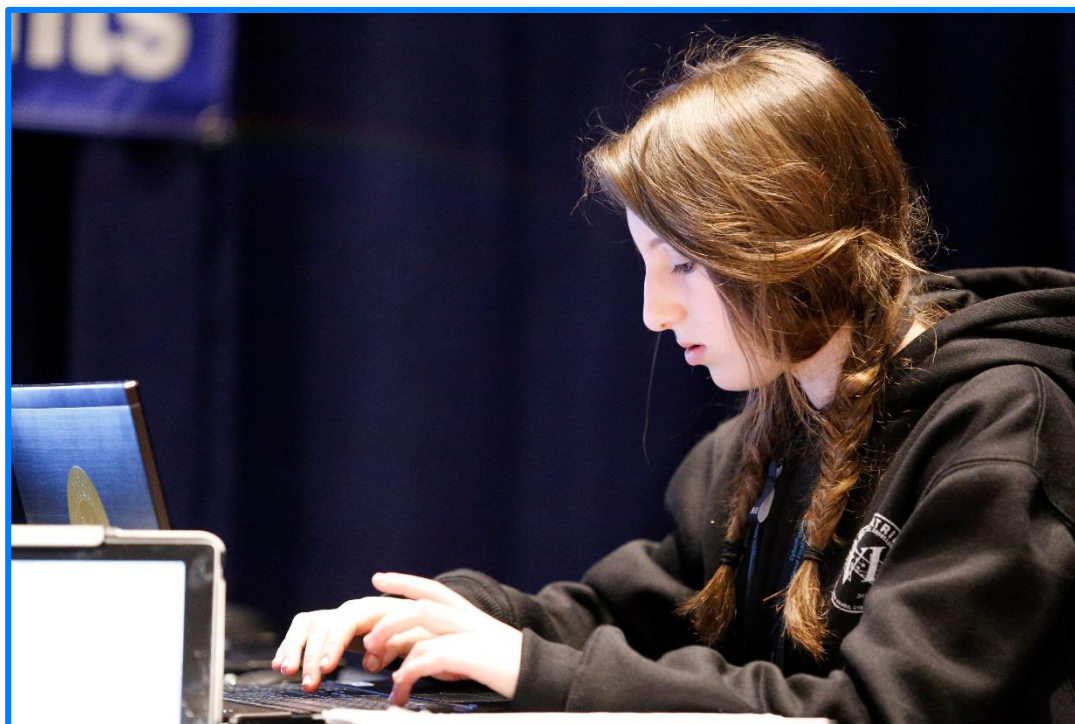




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## CyberPatriot Student Alumni Survey Report

2014

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## **SURVEY DESIGN**

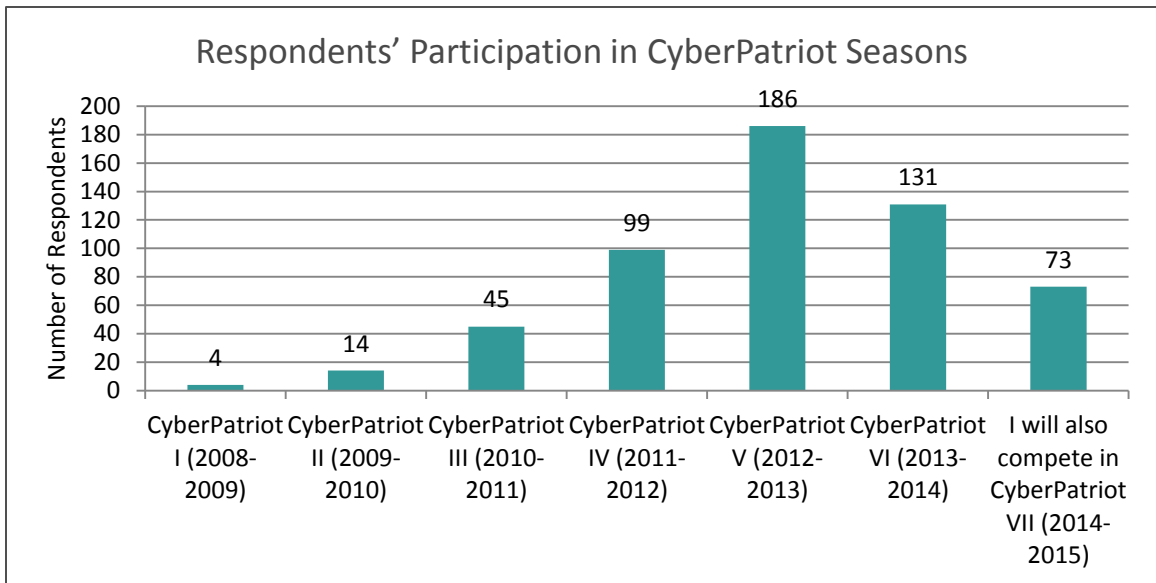
During June 2014, past student participants in the CyberPatriot National Youth Cyber Defense Competition were surveyed in the following areas:

1. Their demographic information
2. Their current academic enrollment status
3. Their current or prospective higher education field of study
4. Their current or prospective field of employment
5. The degree to which they assessed their participation in CyberPatriot as affecting their career and academic goals

254 students responded to the survey (n=254).

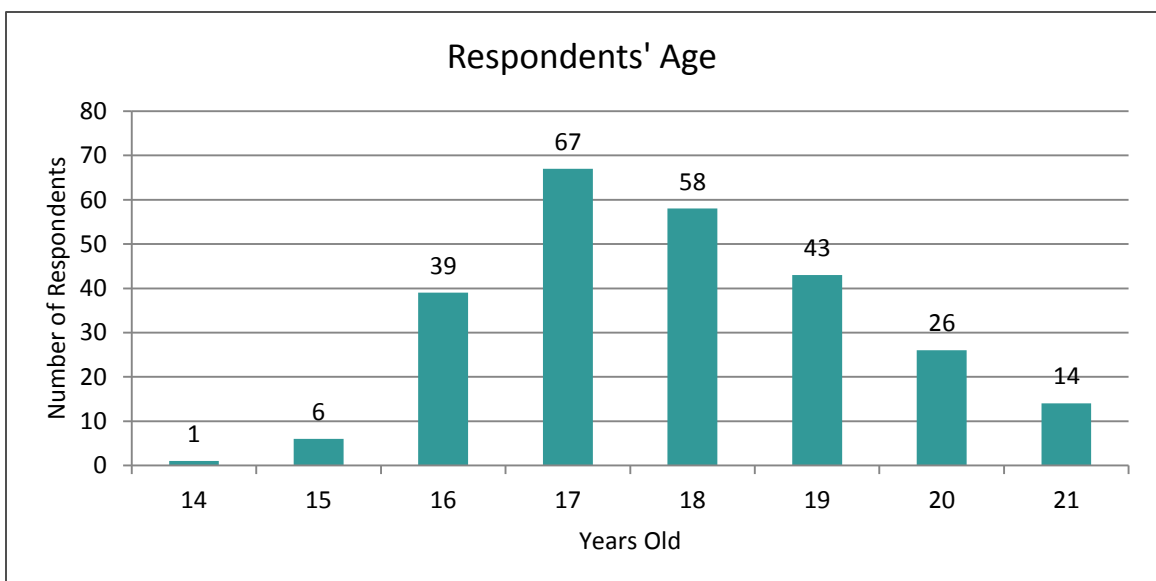
## RESPONDENT DEMOGRAPHICS: SEASON(S) OF PARTICIPATION IN CYBERPATRIOT

Of the 254 respondents, 173 participated in more than one season of CyberPatriot. 29% of respondents indicated they will also compete in CyberPatriot VII.



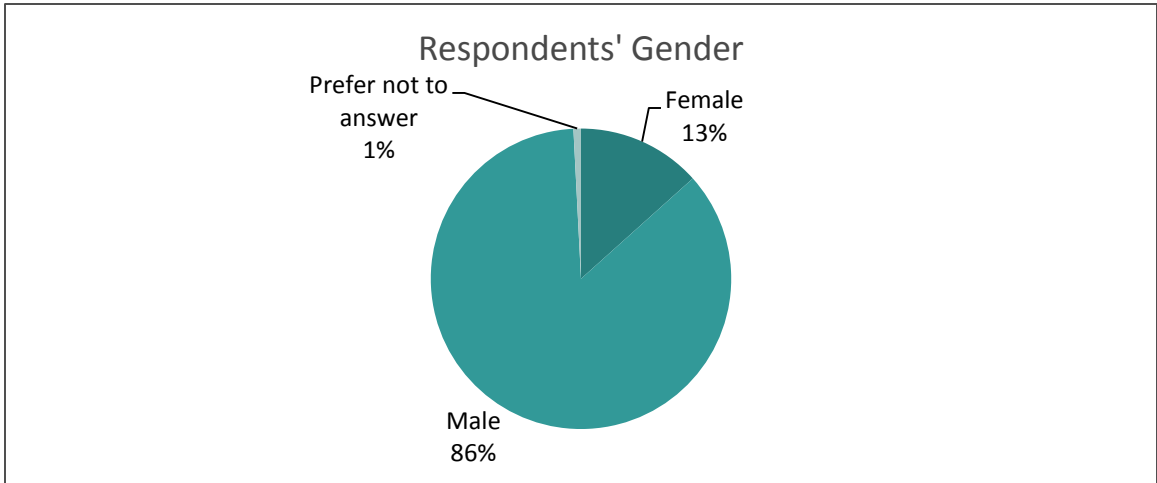
## RESPONDENT DEMOGRAPHICS: AGE

The majority of survey respondents were 18 years old or younger.



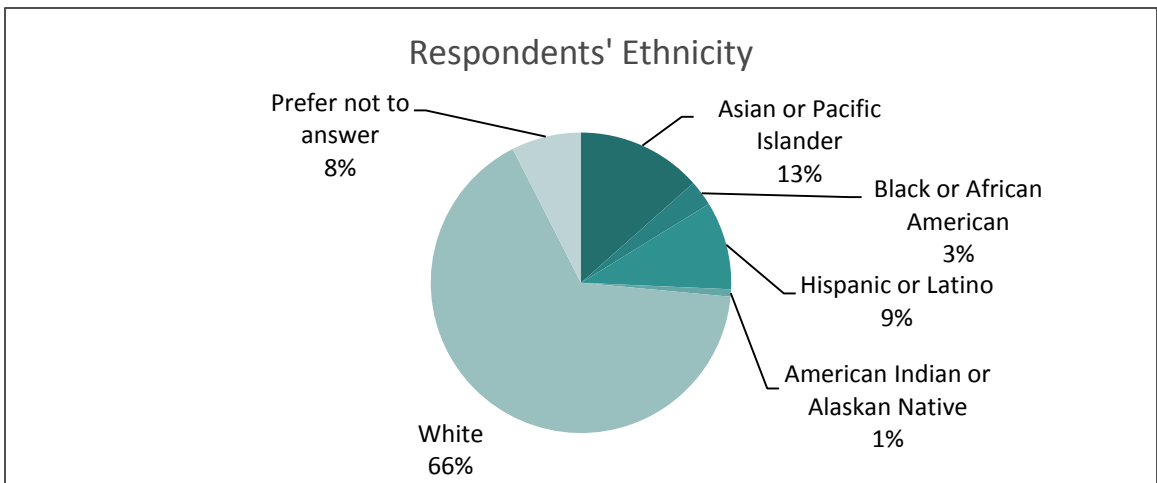
## RESPONDENT DEMOGRAPHICS: GENDER

The majority of the 254 survey respondents were male.



## RESPONDENT DEMOGRAPHICS: ETHNICITY

34% of the survey respondents were of minority ethnicity.

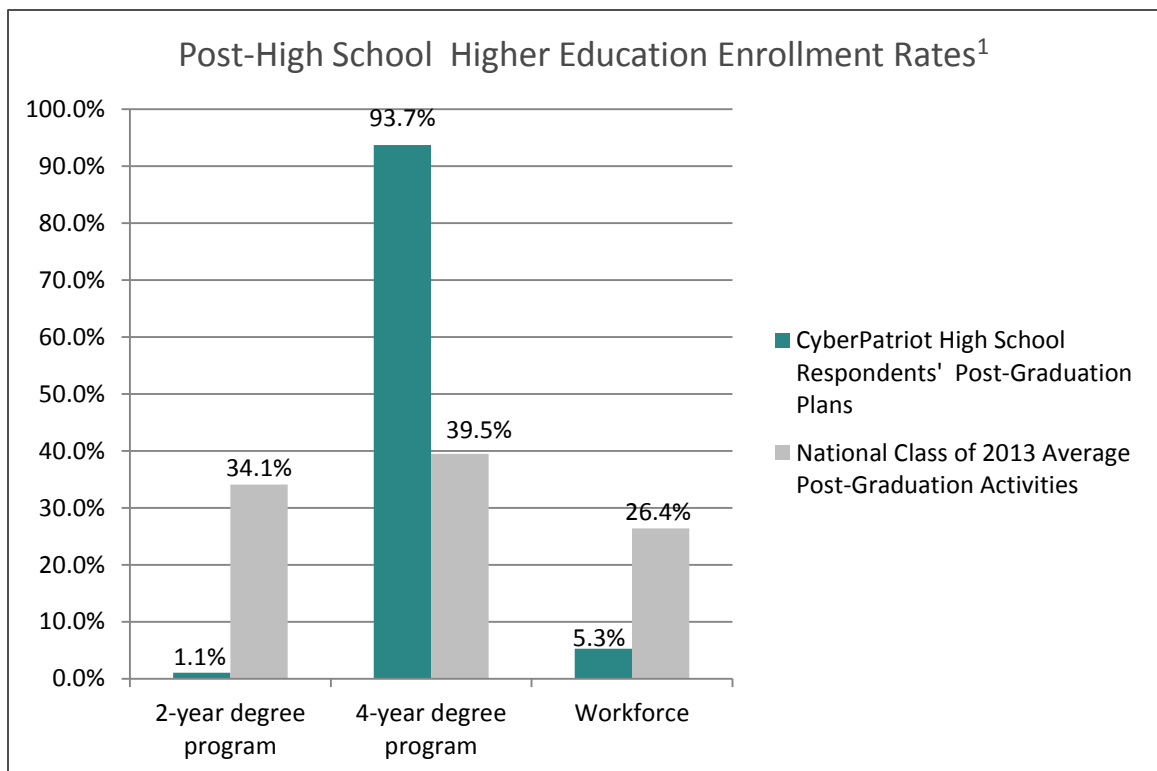




## CURRENT HIGH SCHOOL STUDENTS: POST-HIGH SCHOOL PLANS

95 of the 254 respondents were still enrolled in high school or an equivalent program at the time of the survey. A full 95% of those currently enrolled respondents indicated their intention to pursue a 4-year higher education program (94%) or a 2-year higher education program (1%) after receiving their high school diploma. By comparison, according to the Bureau of Labor Statistics<sup>1</sup>, only 65.9% of American students who graduated high school in 2013 entered college. Additionally, of the 2013 high school graduates who entered college the following fall, only 60% enrolled in 4-year institutions.

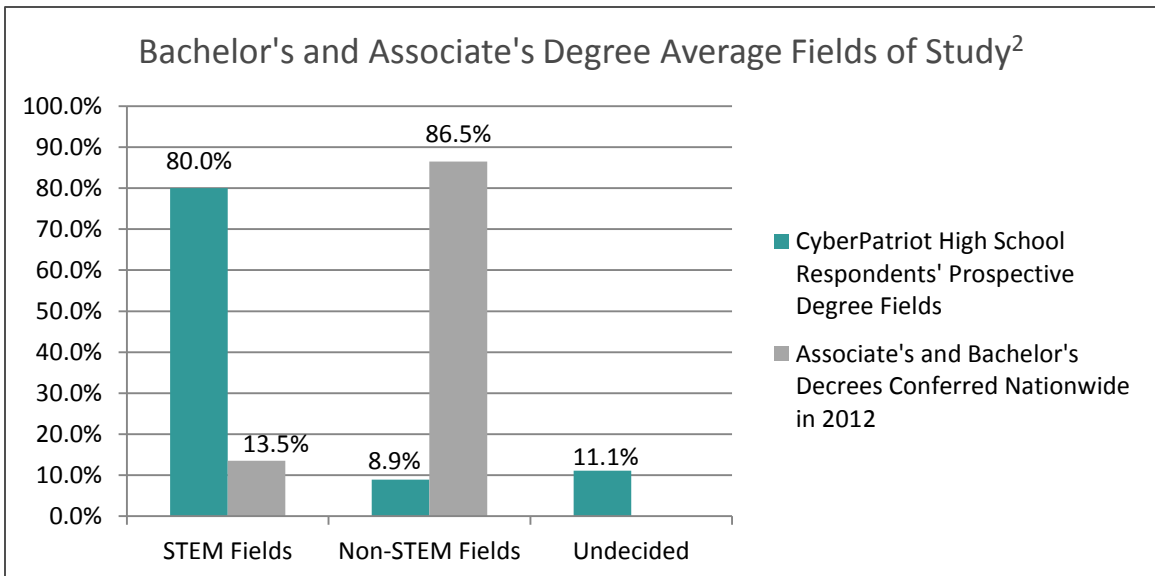
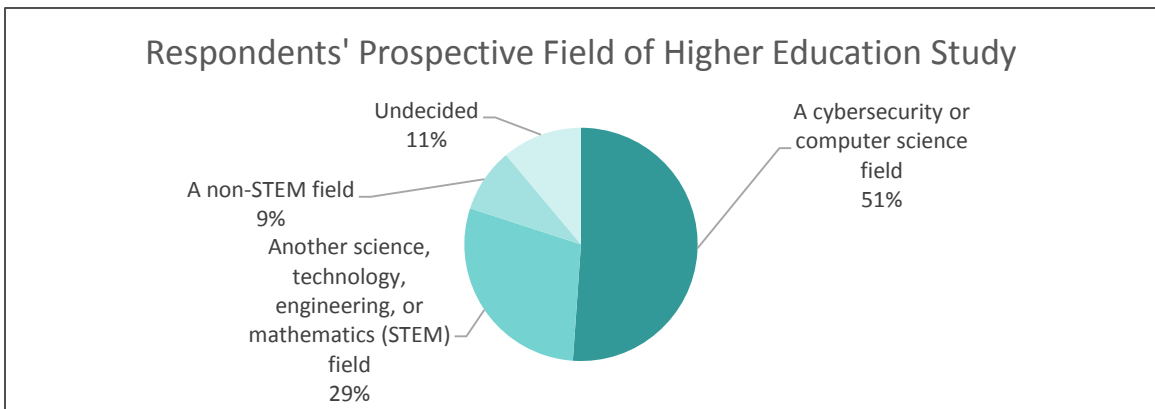
All five of the respondents who indicated they would enter the workforce immediately plan to pursue a career in a non-STEM field.



<sup>1</sup> U.S. Department of Labor, Bureau of Labor Statistics. "College Enrollment and Work Activity of 2013 High School Graduates," *Bureau of Labor Statistics Press Release*, April 22, 2014, <http://www.bls.gov/news.release/hsgec.nr0.htm>

## CURRENT HIGH SCHOOL STUDENTS: HIGHER EDUCATION ACADEMIC PLANS

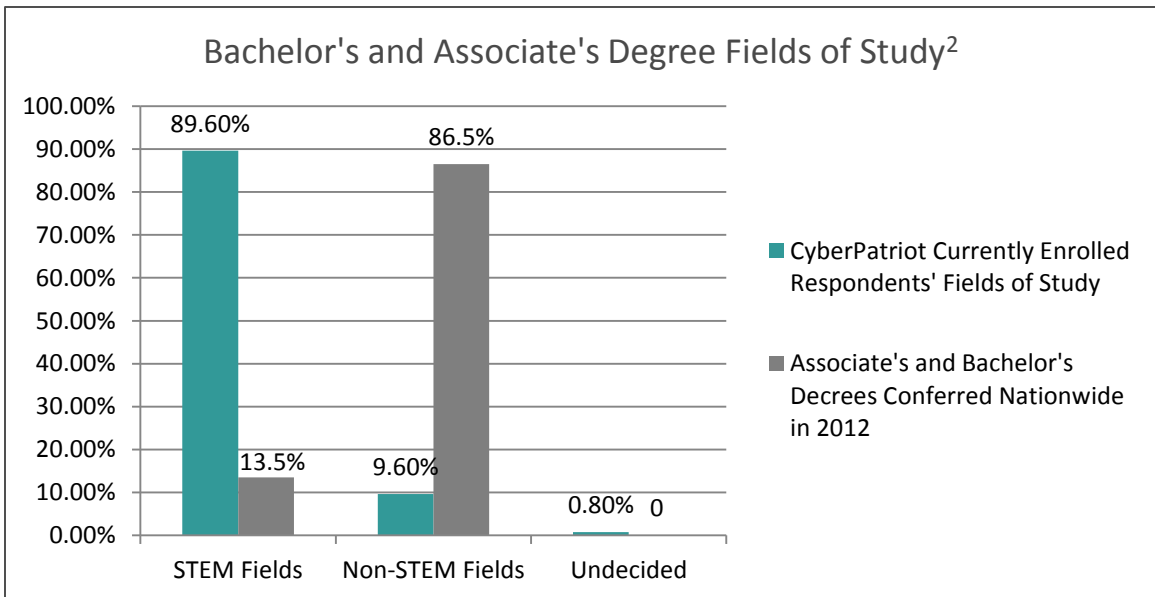
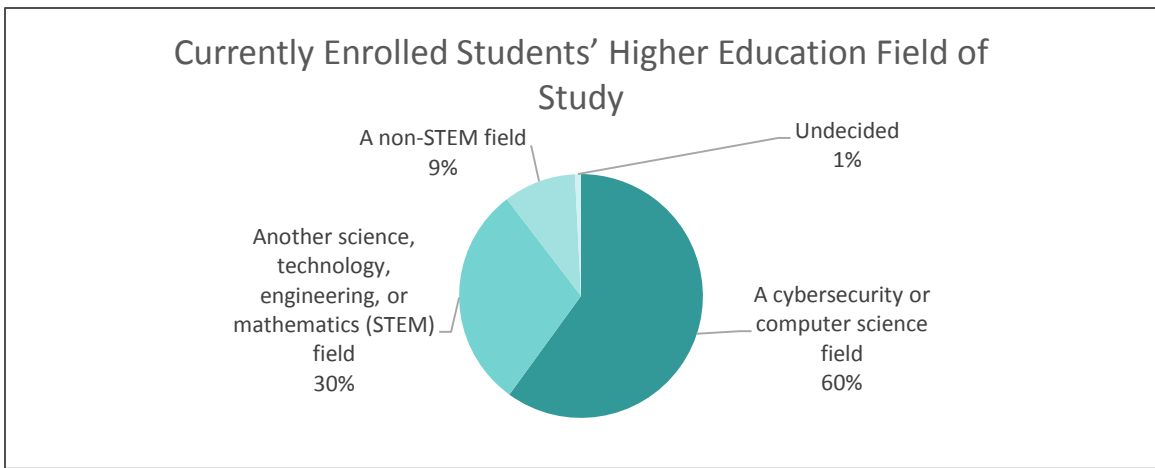
72 of the 90 high school students who indicated they will pursue a 2-year or 4-year education program plan to study cybersecurity, computer science, or another STEM field. The remaining 20% of those respondents were undecided (11%) or plan to study a non-stem field (9%). According to the most recent National Center for Education Statistics report<sup>2</sup>, computer and information sciences degrees only represented 4.1% of associate's degrees and 2.7% of bachelor's degrees awarded nationally in 2012. Including computer and information sciences degrees, degrees in STEM fields accounted for only 9.1% of associate's degrees and 16.0% of bachelor's degrees conferred nationally in 2012.



<sup>2</sup> U.S. Department of Education, National Center for Education Statistics. "2013 Digest of Education Statistics," 2013, [http://nces.ed.gov/programs/digest/2013menu\\_tables.asp](http://nces.ed.gov/programs/digest/2013menu_tables.asp)

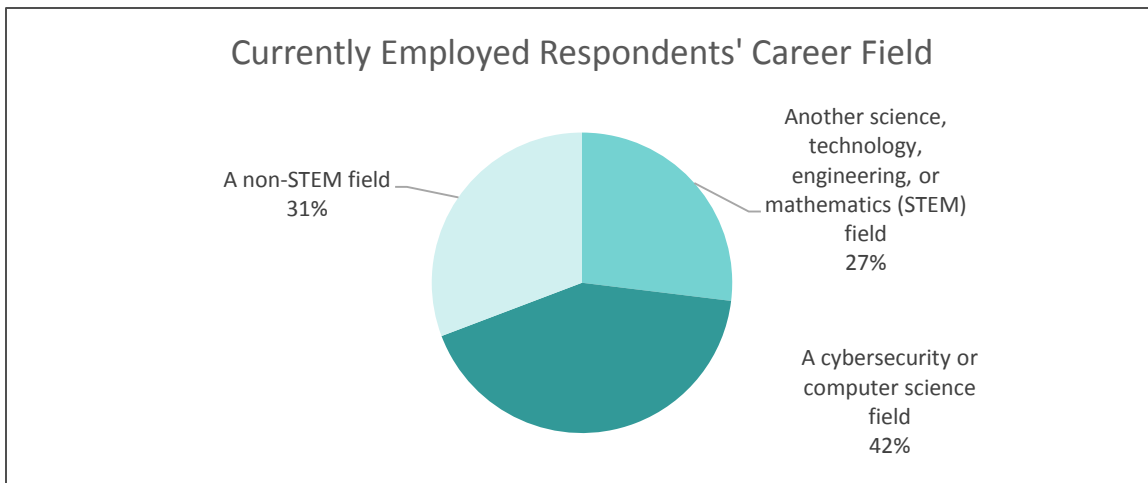
## HIGH SCHOOL GRADUATES: HIGHER EDUCATION ENROLLMENT

Of the survey's 254 respondents, 159 have already obtained their high school diploma, GED, or equivalent home school education. Of those graduates, 78.6% are currently pursuing a higher education degree and 18.2% have already obtained a higher education degree. Reflecting the goals of those survey respondents not yet graduated from high school (pg. 5), a full 90% of the alumni respondents currently pursuing higher education degrees are doing so in a STEM field.



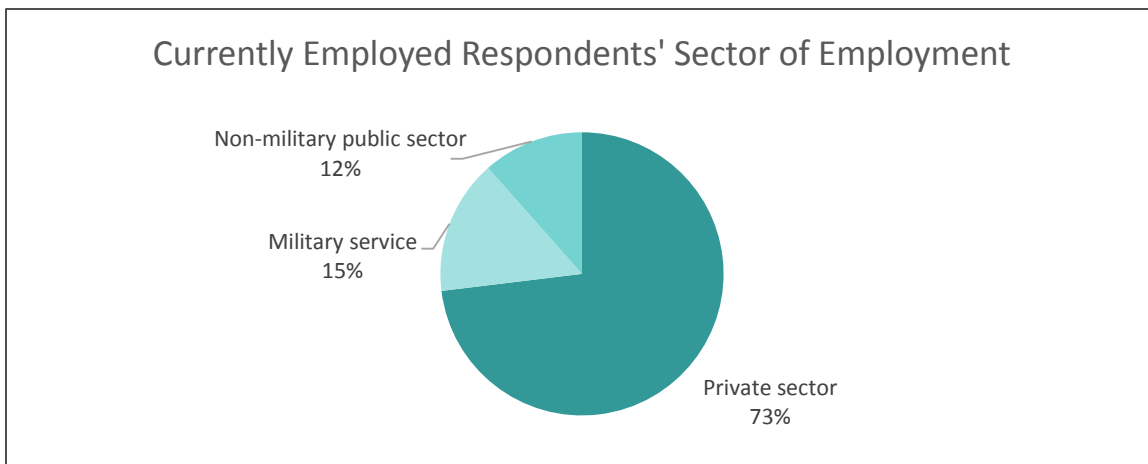
## HIGH SCHOOL GRADUATES: CURRENT CAREER FIELD

Only 26 of the 34 high school graduates who entered the work force immediately after receiving their diploma or who have already obtained a higher education degree are currently employed. Of those 26 respondents, 18 are employed in a cybersecurity, computer science, or other STEM field. According to the Bureau of Labor Statistics, in 2013, only 2.6% of the total employed workforce was occupied in computer science and cybersecurity fields.



## HIGH SCHOOL GRADUATES: CURRENT EMPLOYMENT SECTOR

19 of the 26 currently employed students work for companies in the private sector. 12% work for federal, state, or local government agencies or non-profit organizations. Nationally, 15.1% of employed Americans worked for federal, state, or local government agencies in 2013<sup>4</sup>.



<sup>3</sup> U.S. Department of Labor, Bureau of Labor Statistics. "Employment by major industry sector," 2013, [http://www.bls.gov/emp/ep\\_table\\_201.htm](http://www.bls.gov/emp/ep_table_201.htm)

## RESPONDENTS' PERCEPTION OF THE DEGREE TO WHICH CYBERPATRIOT IMPACTED THEIR CAREER OR EDUCATION GOALS

A full 86.8% of the 254 survey respondents indicated that their participation in CyberPatriot somewhat (49.8%) or significantly (37.0%) impacted their career and educational goals.

