The Air Force Association is:

• 501(c)(3) non-profit organization focused on:
  • **Educating** the American public, advocating for strong national security, and supporting military members and their families
  • Historical focus on advocating for strong national security policies
  • We see **STEM education** today as a **national security issue**

---

When compared to other nations, the math and science achievement of U.S. pupils and the rate of STEM degree attainment appear inconsistent with a nation considered the world leader in scientific innovation. In a recent international assessment of 15-year-old students, the U.S. ranked 28th in math literacy and 24th in science literacy. Moreover, the U.S. ranks 20th among all nations in the proportion of 24-year-olds who earn degrees in natural science or engineering.

2008 Congressional Research Study
“Science, Technology, Engineering, and Mathematics (STEM) Education: Background, Federal Policy, and Legislative Action”
The national youth cyber education program.

The national youth cyber defense competition.

Carefully structured to excite, educate, and motivate participants.

Designed to instill in all participants the importance to our nation of cyber, cyber security, and good computer security practices.

Designed to motivate all participants to consider STEM academic disciplines to meet our nation’s needs.

Designed to motivate many participants to become the next generation of cyber defenders and our nation’s “digital workforce.”
1. “Hacker training”
   • Cyber ethics discussions are an important (and early) component in our curriculum
   • We don’t teach “hacking” tools or techniques
   • “Hacking” in competition is strictly forbidden

2. A recruiting tool for the Air Force, the Department of Defense, or the Federal government. This is about building a strong national foundation for cyber skills throughout our high schools.
The National Youth Cyber Education Program

- **Elementary School Cyber Education Initiative**
- **Cyber Education Literature Series**
- **National Youth Cyber Defense Competition**
- **AFA CyberCamps**
- **CyberGenerations**

**Goal** = Attract students to STEM education and careers
SKILLS WE TEACH

• Cyber ethics
• Leadership and teamwork
• Creative and analytical problem solving
• Non-technical cyber principles (e.g.—social engineering, phishing, vishing, etc.)
  • “Netiquette”
  • Cyber safety
  • Cyber hygiene
• Computing and networking principles
  • Operating systems
  • Network topologies & cabling
• Foundational cyber security principles
  • Cyber and system vulnerabilities
  • Network security
  • Vulnerability remediation
  • Technical threats
CYBER DEFENSE COMPETITION

- Registration opens April 1
- Coach registers team
- 2-6 students per team
- Optional Technical Mentor(s)

- 12 online training modules
- 3+ training rounds
- Technical AND soft skills learned

- Guaranteed 3 online rounds
- Live scoring / scoreboard
- Top teams attend National Finals
$205 per high school team
$165 per middle school team

Fee waivers for:
- Title I schools
- All-female teams
- JROTC teams
OPEN DIVISION

High school age groups:
- Public schools
- Private schools
- Parochial schools
- Magnet or charter schools
- Home school groups
- 4-H clubs
- Boys and Girls clubs
- Scouting units
- Other youth programs

53% of teams

ALL SERVICE DIVISION

High school age groups:
- Air Force JROTC units
- Army JROTC units
- Marine Corps JROTC units
- Navy JROTC units
- Civil Air Patrol squadrons
- Naval Sea Cadet Corps units

28% of teams

MIDDLE SCHOOL DIVISION

Middle school age groups:
- Public schools
- Private schools
- Parochial schools
- Magnet or charter schools
- Home school groups
- 4H clubs
- Boys and Girls clubs
- Scouting units
- Other youth programs

19% of teams
A COMPETITION “IMAGE”
Initiatives:

• Full fee waivers for all-girls teams
  – 348 all-girl teams in CP-XII
  – 309 all-girl teams in CP-XI
    • One all-girl team at CP-XI National Finals
  – 244 all-girl team in CP-X
    • Two all-girl teams in CP-X National Finals

• Female only sessions at AFA CyberCamps

• Female highlights promotional materials

12% National Average: Female Participation in STEM programs
MINORITY OUTREACH

• Continued strong recruitment in urban areas
• Engagement with Boys and Girls Clubs of America, “CODE2040,” National Society of Black Engineers, Society of Hispanic Professional Engineers

• Objectives:
  • Improved minority student recruitment
  • Mentoring

• CP-IX Presence: ~43%
• CP-X Presence: ~44%
• CP-XI Presence: ~45.5%
AFA CYBERCAMPS

2020: Sixth full season of AFA CyberCamps

• Hosted by schools and organizations
• Standard or advanced curriculum
• Delivered over five 4-hour days
• Available weeks:
  ▪ Week 1: June 8-12
  ▪ Week 2: June 15-19
  ▪ Week 3: June 22-26
  ▪ Week 4: July 13-17
  ▪ Week 5: July 20-24
  ▪ Week 6: July 27-31
  ▪ Week 7: August 3-7
AFA CyberCamps

Apply at [www.uscyberpatriot.org](http://www.uscyberpatriot.org) before May 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Standard Camp $1,150</th>
<th>Advanced Camp $1,450</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro to CyberPatriot</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Intro to VMs</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Cyber Ethics</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Windows 10</td>
<td>Security Policies</td>
<td>Graphical Utilities Windows Command Line Sysinternals Suite</td>
</tr>
<tr>
<td></td>
<td>Account Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>File Protections</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Auditing &amp; Monitoring</td>
<td></td>
</tr>
<tr>
<td>Ubuntu 16</td>
<td>Terminology &amp; Concepts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basic User Interface Security</td>
<td>Init Systems Advanced Command Line</td>
</tr>
<tr>
<td></td>
<td>Basic Command Line</td>
<td>Processes and Scheduled Tasks</td>
</tr>
<tr>
<td></td>
<td>Intermediate Security</td>
<td>Security Policies and PAM Networking</td>
</tr>
<tr>
<td>Cisco NetAcad</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Competition Day</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Elementary School Initiative

Elementary School Cyber Education Initiative (ESCEI)

• Three FREE interactive learning modules:
  – Security Showdown 2 (Grades K-2)
  – JeffOS (Grades 3-6)
  – Packet Protector (Grades 3-6)
• Over 9,500 kits requested in over 10 countries
Cyber Education Literature Series

Sarah the Cyber Hero
- Pre-K reader for younger children
- Pioneers the topic of cybersecurity for early elementary youth
- Available on Bookbaby.com and Amazon
  - Over 1,300 copies sold and distributed

Ben the Cyber Defender
- Second book released March 2020
- The story of a cybersecurity whiz and his epic adventure trying to save his cousin and friends from impending cyber disaster!
• The Senior Citizens’ Cyber Safety Initiative
  – Password Management
  – Malware/Ransomware
  – Marketing & Fraud Scams
  – Social Media Awareness
  – Self-help Resources for victim assistance

• Self-paced guides for individuals
• Teaching resources for group workshops
  • FREE to host
  • Tech Caregiver program coming soon (for HS/MS students)
AIR FORCE ASSOCIATION’S
CYBERPATRIOT
NATIONAL YOUTH CYBER EDUCATION PROGRAM

ALUMNI SURVEY RESULTS
July 2018*

*New survey coming in Spring 2020
AGE – THE SWEET SPOT

RESPONDENTS’ AGE
GENDER

- Male: 71%
- Female: 27%
- Prefer not to answer: 2%
### POST-HIGH SCHOOL HIGHER EDUCATION ENROLLMENT RATES

<table>
<thead>
<tr>
<th>Post-High School Plans</th>
<th>2-Year Degree Program</th>
<th>4-Year Degree Program</th>
<th>Workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>CyberPatriot Respondents</td>
<td>8.3%</td>
<td>87.3%</td>
<td>4.4%</td>
</tr>
<tr>
<td>National Class of 2017</td>
<td>22.2%</td>
<td>44.4%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

RESPONDENTS’ PROSPECTIVE FIELD OF HIGHER EDUCATION STUDY

- A non-STEM field: 6%
- A Computer Science Field: 25%
- A Cybersecurity Field: 20%
- Another STEM Field: 30%
- Undecided: 19%

BACHELOR’S & ASSOCIATE’S DEGREE FIELDS OF STUDY

- STEM FIELDS: 75.6%
- NON-STEM FIELDS: 85.1%
- UNDECIDED: 18.9%

CyberPatriot Respondents
National Average 2016
CURRENTLY ENROLLED STUDENT’S HIGHER EDUCATION FIELD OF STUDY

- A Computer Science Field: 35%
- A Cybersecurity Field: 28%
- Another STEM Field: 26%
- A non-STEM field: 9%
- Undecided: 2%

BACHELOR’S AND ASSOCIATE’S DEGREE AVERAGE FIELDS OF STUDY

- STEM FIELDS: 88.7%
- Non-STEM FIELDS: 85.1%
- Undecided: 2.4%

CyberPatriot Respondents vs National Average 2017
DEGREE TO WHICH PARTICIPATION IN CYBERPATRIOT IMPACTED RESPONDENTS’ EDUCATION AND CAREER GOALS

- Not at all: 9%
- Somewhat: 53%
- Significantly: 38%
OUR GENEROUS SPONSORS

Presenting Sponsor

NORTHROP GRUMMAN FOUNDATION

Cyber Diamond Sponsor

AT&T | BOEING | CISCO | U.S. DEPARTMENT OF HOMELAND SECURITY | Microsoft Azure

Cyber Gold Sponsor

AIR FORCE RESERVE | BNY MELLON | Facebook | Norton by Symantec | The USAA Foundation

Cyber Silver Sponsor

AMU | American Military University | Leidos | Embry-Riddle Aeronautical University | VMware
Questions:

info@uscypatriot.org

877-885-5716