



ISSUE
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THE CYBERSENTINEL

The official newsletter of CyberPatriot—AFA's National Youth Cyber Education Program

COMMISSIONER'S CACHE



Elsewhere in this issue you can find a cool piece in our regular "This Month in Cyber History" column that chronicles the rapid growth of the internet, from one (!!) website in 1991 to over 1.72 billion today. I'm sure that amazes you as much as it does me.

The web has become the center of commerce, industry, public safety, government, and national defense to the extent that it is virtually impossible to imagine life without it. But that dependence comes with the high price of making our nation and its friends vulnerable to cyber threats. And that, of course, is

why CyberPatriot is so important.

Thanks to our sponsors, led by Northrop Grumman Foundation, for making it possible. (Oh, and I found it fascinating that CyberPatriot has grown from eight teams in 2009 to nearly 7,000 teams this season, a growth of 83,000%! The internet grew by 622% in that same period.)

Bernard K. Skoch | National Commissioner



DATES TO KNOW

NOV. 1	Competitor Registration Deadline
NOV. 15	Payment Deadline
NOV. 15-17	CP-XII Round 2
DEC. 6-8	CP-XII State Round

HAPPY THANKSGIVING



From the CyberPatriot Program Office

TIS THE SEASON... FOR PARTICIPANT KITS!

It's every CyberPatriot competitors' favorite time of year... PARTICIPANT KIT SEASON!

The week of Nov. 18-22, CyberPatriot staff will be packing and shipping nearly 3,500 packages to team across the country. Like years past, every participant will receive a CP-XII t-shirt, challenge coin, and lapel pin.

A lot of planning and execution goes into sending roughly 3,500 packages in just a week. Coins and pins are pre-counted into individual bags, based on a data pull of how many students are registered under a specific coach. From there, order labels are placed on flat boxes before being assembled, filled, and sealed. A shipping label is matched to the package and the local FedEx crew from Arlington, VA picks up between 600-800 packages a day over the course of several pick-up times.

All of the packing is done in-house in the fourth floor board room of AFA's headquarters. The t-shirts alone (all 31,000 of them) take up 6 parking spaces from floor to ceiling in the parking garage and weigh 5.5 ton! The amount of tape used during the packing process is enough to stretch almost 7 miles!

We hope you enjoy the participant kits this year, and appreciate your patience and we support during the packing process!



NCWIT ASPIRATIONS IN COMPUTING / EDUCATOR AWARD



AspireIT K-12 Education Program

The AspireIT K-12 education program (sponsored by Google, Intel, Northrop Grumman, Bank of New York Mellon, and Kode with Klossy) connects high school and college women with K-12 girls interested in computing. Using a near-peer model, program leaders teach younger girls fundamentals in programming and computational thinking in fun, creative environments that are supported by program partners from the NCWIT community. The relationship between the program leaders and their program partners fosters mentoring with technical professionals, increases young women's confidence in their computing abilities, and develops valuable leadership skills. Find out more at www.aspirations.org.

Educator Award

The NCWIT AiC Educator Award publicly celebrates formal and informal educators who encourage high school women's interest and participation in technology pursuits. To date, nearly 400 educators have been honored. The NCWIT AiC Educator Award is sponsored by AT&T. Find out more at www.aspirations.org/participate/educators.



CYBERPATRIOT
ROUND 2 | NOV. 15-17



CYBERPATRIOT XII ROUND 2—NOV. 15-17

All teams are eligible to compete in Round 2. High school teams will see Windows 10, Server 2016, and Ubuntu 14 images, along with a Cisco networking quiz and packet tracer exercise. After this round, high school teams are sorted into skill-levels (Platinum, Gold, or Silver Tier) based on their cumulative Round 1 and Round 2 Scores.

Middle School teams will also see Windows 10, Server 2016, and Ubuntu 14 images, but will not have a cisco component in this round.

GOOD LUCK!

NATIONAL CYBERSECURITY CENTER DESIGNATED AS NEWEST CYBERPATRIOT COE



CyberPatriot is pleased to announce the National Cybersecurity Center (NCC) as the the program's newest Center of Excellence. Here's a brief statement from NCC:

The National Cybersecurity Center (NCC) is a non-profit 501c (3) organization based in Colorado Springs, Colorado. We are a think tank, tackling tough cybersecurity challenges by bringing together experts from private, public and academic organizations to help secure the world.

Our mission is to provide cybersecurity leadership, and one of our main pillars is K-12 education. As our nation addresses the critical gap in skilled cybersecurity talent, we address the importance of cyber education through programs and partnerships that invite students to participate in an ecosystem which encourages them to learn, explore, and build their skills.

In our K-12 initiative, the NCC offers opportunities for middle and high school students to improve technical literacy through fun, interactive, and challenging camps, field trips, workshops and events. We encourage STEM education for all students, with special attention towards creating inviting and collaborative opportunities for girls and other underrepresented groups in the cyber ecosystem.

The National Cybersecurity Center Student Alliance (NCCSA) provides free cybersecurity training for teachers, students and adults hoping to enter the cybersecurity field. All members of the NCCSA will have access to training that will lead to certification and membership is to all schools. Our goal is to close the gap between available jobs and the trained professionals to fill those jobs.



**NATIONAL
CYBERSECURITY CENTER
STUDENT ALLIANCE**

The NCC is proud to have CyberPatriot as our partner. Through the CyberPatriot program, we have been able to introduce and train hundreds of students in the field of cybersecurity. Through this program, we are able to provide internships, shadowing opportunities mentorships, grants and scholarships for middle and high school students. We look forward to continuing this great relationship with CyberPatriot and working together to contribute to the growth and development of our future cyber professionals throughout our great nation.

SPOTLIGHT: CSforALL ANNOUNCES JROTC-CS PROGRAM

New Initiative Aims to Bring Computer Science & Cyber Education to Half a Million JROTC Youth

On Wednesday, October 23, at the [2019 CSforALL Summit](#), leaders representing [CSforALL](#) and Air Force Junior ROTC announced JROTC-CS, an innovative new initiative that could dramatically increase the number of U.S. high school students taking an Advanced Placement computer science course, particularly among underrepresented populations like minority and female students. This public-private partnership is supported by an Advisory Consortium of industry and education organizations including founding members [Intel Corporation](#), [Microsoft](#), [Capital One](#), [Lockheed Martin](#), [Snap Inc.](#), the [Air Force Association's CyberPatriot](#), and the [College Board](#).

More than 500,000 cadets at 3,400 high schools across the U.S. and abroad participate in JROTC programs administered by each of the military services. Only 32% of these cadets have access to Advanced Placement (AP) Computer Science Principles in their school, according to 2018–19 College Board data. The JROTC-CS initiative seeks to access this untapped human resource to address the national talent shortage in computing and cybersecurity and increase career opportunities for JROTC cadets, who are a highly diverse population — more than half are minority students and 40% are female. Additionally, JROTC is strongly represented in schools serving economically disadvantaged communities.

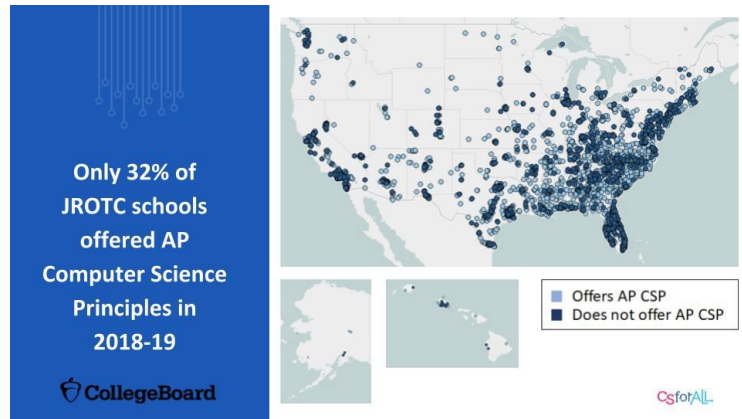
We are proud to be partnering with CSforALL on behalf of our sister service JROTC units to help test this new program,” said Col. Stephen Sanders, Director, Air Force Junior ROTC. “In today’s digital world, meaningful preparation in technology and STEM related education is a critical part of preparing our youth for success.”

“We at CSforALL are excited about the impact this initiative will have for the youth of the United States,” said Ruthe Farmer, Chief Evangelist at CSforALL. “Beyond bringing JROTC cadets into technology career pathways, this initiative has the potential to provide access to AP computer science for an additional 2.6 million students that attend JROTC high schools.”

“We’re honored to join CSforALL to help the next generation of young Americans learn the skills they need to serve their country,” said Stefanie Sanford, chief of global policy for the College Board, which offers the AP Computer Science A and AP Computer Science Principles courses. “Computer science is fast emerging as one of the core skills of the modern world. Far more students deserve access to evidence-based computer science so they can shape the future, not just cope with it.”

“At Intel, we are committed to advancing diversity and inclusion not only in our own company but across the technology industry. To shape the future of technology, we must be representative of that future. The challenge before us is not a lack of talent but rather a lack of access,” said Barbara H. Whye, Chief Diversity and Inclusion Officer and Vice President of Human Resources at Intel Corporation. “Earlier this year we testified before the U.S. House of Representatives House Committee on Science, Space and Technology and advocated for congress to address systemic opportunity gaps on a national level. Leveraging the JROTC program infrastructure provides a solution to address access to tech education at a systems level, and we are thrilled to be part of moving this innovative approach forward.”

The JROTC-CS initiative is designed to complement the innovative, bi-partisan [JROTC Cyber Training Act](#) passed by the U.S. House of Representatives as part of the 2020 House National Defense Authorization Act (NDAA) on July 12. The NDAA is being negotiated in conference committee with the U.S. Senate. [House Resolution 3266](#) is sponsored by Reps. Lizzie Fletcher (D-Tx.), Rob Bishop (R-Ut.), Jackie Speier (D-Calif.), Conor Lamb (D-Penn.), and Michael Waltz (R-Fla.). The Senate version, [Senate Bill 2154](#), is sponsored by Sens. Jacky Rosen (D-NV), Marsha Blackburn (R-TN), John Cornyn (R-TX), Gary Peters (D-MI) and Steve Daines (R-MT).



Representatives from Intel, JROTC, Hill AFB, Microsoft, and CyberPatriot met with AF JROTC cadets from Utah during the CSforAll Summit held in Salt Lake City at the end of October.



THE HUMAN FACTOR IN CYBERSECURITY BY MADHU DEBNATH, CYBERPATRIOT

Data breaches are an everyday occurrence now. We frequently hear about breaches impacting high-level organizations which collect and store huge amounts of data about their customers – data which can be exploited to steal identities and commit fraud or online theft.

These breaches have highlighted a number of security vulnerabilities which these big and small businesses must address to ensure that their customer data is well protected from cybercriminals. The biggest and toughest challenge, however, is the human factor which makes these security threats much more complicated and harder to deal with.

So, what is the human factor and is it possible to mitigate the threat of hackers exploiting it to commit cybercrimes?



In the context of cybersecurity, the human factor refers to errors occurring as a result of unintentional actions by employees or users. These unintentional actions may include opening a phishing email, clicking on a malicious link, or downloading harmful attachments. Such small actions can have wide-spread consequences and can ultimately lead to a security breach.

According to one report by Experian, [66 percent](#) of the experts surveyed agreed that when it comes to the threat of a cyberattack, their employees are the biggest chink in their armor. More and more organizations are implementing awareness training for their employees, instituting specific cybersecurity policies, and devising response plans for sudden cyberattacks.

These efforts are a step in the right direction, but,

despite such measures, one thing that will always remain an issue is that **human beings make mistakes**. For example, the exploit used in the 2017 [WannaCry](#) attack was already patched by Microsoft and the victims could have easily avoided the attack if they had managed to install the latest security updates on time. Other human errors may include flawed password hygiene practices, [misdelivery](#), clicking on links indiscriminately, and visiting suspicious websites, amongst others.

However, all is not lost! Organizations can take steps to diminish threats by implementing systems which can help eliminate the danger posed by the human factor. Regular awareness training, stringent security policies, and making cybersecurity an integral part of their brand narrative can definitely help spread awareness and minimize risks. Knowledge is empowerment and, in this case,, if everyone involved is equipped with the right knowledge then that makes the job of cybercriminals that much harder.

THIS MONTH IN CYBER HISTORY

November 5, 2006 — Internet Boasts 100 Million Sites

According to Internet services company Netcraft Ltd., on this day over 100 million Web sites existed on the Internet. The milestone capped an extraordinary year in which the Internet added 27.4 million sites, easily topping the previous full-year growth record of 17 million from 2005. The Internet doubled in number of sites since May 2004, when the survey hit 50 million. Blogs and small business Web sites drove the explosive growth in 2006, with huge increases in free blogging services at Google and Microsoft. The first Netcraft survey in August 1995 found 18,957 hosts. **Today, there's an estimated 1.71 billion websites!**

For more information, visit:

<http://www.computerhistory.org>

and

<https://www.statista.com/>



* Website is defined as a unique hostname, i.e. a name which can be resolved, using a name server, into an IP Address.
 ** As of August 1, 1991
 *** As of October 28, 2019 at 10:00 CET
 Source: Internet Live Stats

statista

Students on the Medina Valley AFJROTC CyberPatriot team received a special visit from Congressman Will Hurd (Tex.) during CP-XII Round 1. (Photo credit: F. Hall, team coach)



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