



MVHS CYBERPATRIOT:
POUNCING INTO A NEW CYBER SEASON

I want to welcome all of our returning and new team members to the 2021—2022 cyber season! This season our team has participated in CyberPatriot XIV which is also the tenth year the Medina Valley AFJROTC CyberPatriot team has been competing in the national youth cyber defense competition. Ten years ago, Lt Col Spracale saw the importance and need to get the cadets involved in cybersecurity. When we started the team, there were just five cadets that met once a week. Now our team has grown to become a team that is recognized in the San Antonio and national cybersecurity communities and has become one of the most popular teams to join in the AFJROTC program.

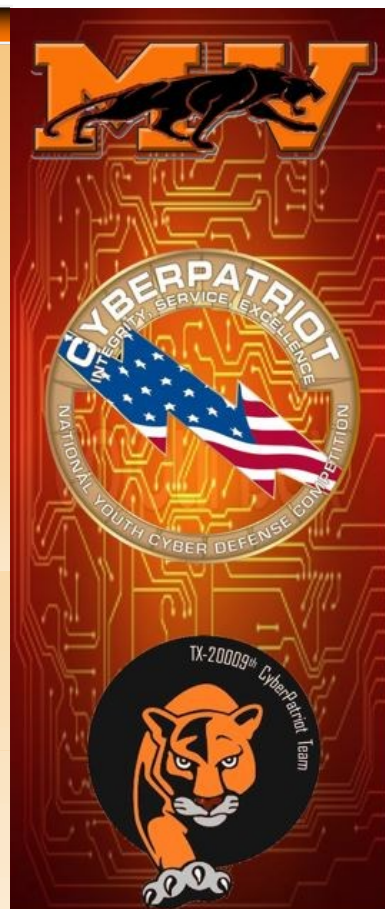
Since the start of the school year, our team has been part of some pretty exciting cyber related events. Here is a recap of what our TX-20009th AFJROTC CyberPatriot team has done so far this season.

- The AFJROTC CyberPatriot team captain, Pilar “Number 1” Zinsmeyer, attended the Women in CyberSecurity (WiCyS) National Conference in Denver, Colorado.
- The AFJROTC team now has its own cyber competition building. Team members spent the first few weeks of the school year preparing the area for the first round of the CyberPatriot competition. The team hosted our first guest speaker, U.S. Representative Tony Gonzales, Texas District 23.
- Members of our team participated in a Capture the Flag (CTF) event at the Armed Forces Communications & Electronics Association (AFCEA) Alamo ACE Cybersecurity conference.
- This year the AFJROTC has four teams that participated in the CyberPatriot competition. All teams have completed the first three rounds and were placed into their skill-level tiers with the following results: Team 1 Platinum Tier, Team 2 Platinum Tier, Team 3 Gold Tier, and Team 4 Silver Tier. Congratulations to Team 1, The Ragin’ Cyberpenos, for advancing to the semi-finals.

In this issue there will be articles about a few of the events that have happened since the beginning of the school year. We will also have a column about a cyber security event in which no less than 19 students at Medina Valley had their Instagram accounts hacked.

I am looking forward to an exciting second half of the cyber season.

-Head Coach Frank “Odin” Hall



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“I want you to become cyber first responders for Castroville and other small towns throughout Texas.”



U.S. REPRESENTATIVE GONZALES VISITS THE AFJROTC CYBERPATRIOT TEAM

On October 18, 2021, the TX-20009th AFJROTC CyberPatriot team hosted our first guest speaker of the season, U.S. Representative, Texas District 23, Tony Gonzales at the team's new cyber competition building. After entering the building, Coach Fredrick Hall introduced the Congressman to the team and briefly discussed his back-



U.S. REPRESENTATIVE TONY GONZALES (CENTER) WITH THE MEDINA VALLEY AFJROTC CYBERPATRIOT TEAM

ground. Then Coach Hall provided Representative Gonzales an overview of the CyberPatriot competition and its three distinct disciplines: Windows and Linux operating systems and the Cisco Network challenge. He went on to explain that even though each team member has a specific role to play, everyone works together as one cohesive team. Coach Hall said, "I encourage all of the team members to learn about networking and both operating systems. This way if a team member cannot solve a problem, the other team members can assist them to find a solution which is exactly what cyber defense teams do throughout the industry."

Congressman Gonzales began his discussion by talking about his childhood saying that was when he learned the value of working hard to help support his family. After leaving high school, he enlisted in the United States Navy as a Cryptologist, where he served for twenty years before retiring at the rank of Master Chief Petty Officer. As a Cryptologist in the Navy, he used state of the art computers to analyze and report on communications signals as part of signal intelligence (SIGINT). The signals are used to exploit interests to identify, locate and report worldwide threats, which is used to write technical guidance that supports the efforts on surface, subsurface, and air and special warfare units.

Congressman Gonzales went on to talk about some of the recent cyber-attacks on critical infrastructure such as the Colonial Pipeline oil refinery system, the attack on the JBS meat processing plant, and the attacks on water processing facilities, and how these attacks impacted our country. The team was then asked if anyone had lost power or water during the winter storm in February 2021. Many team members replied that they had lost one or both services. He then asked them to imagine if that was a cyber-attack instead of something caused by bad weather? What would be the impact of a cyber-attack against the critical infrastructure in a small town like Castroville? Who would be there to be the first responders to a cyber-attack in a small town? This grabbed the cadets' attention and had them listening more attentively. U.S. Representative Gonzales said that is why the cyber skills that you are learning here are so important; I want you to become cyber first responders for Castroville and other small towns throughout Texas. He then added that our team is learning how to identify threats that make a computer or network vulnerable to a cyber-attack.

(Continued on page 4, U.S. Representative Gonzales)

THE CYBER VIKING SYSLOGS THE IMPORTANCE OF TWO FACTOR AUTHENTICATION BY FRANK HALL

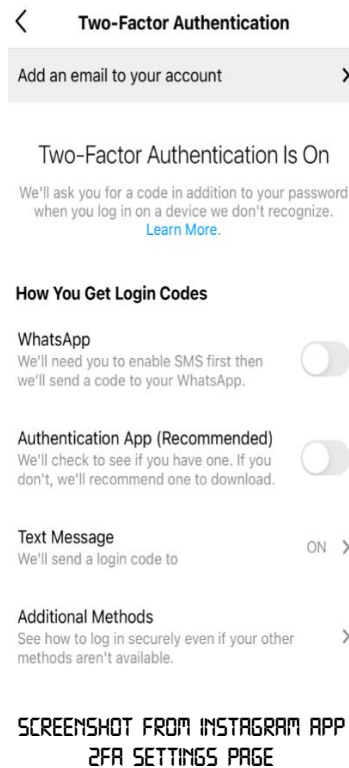
In early September, one of my team members contacted me saying that her Instagram account had been hacked. She explained that she has two accounts on Instagram, but that the hacker had only gained access to her private Instagram account. Once the hacker gained access, he would make her account follow his profile and create new accounts. She attempted to block all of the accounts the hacker had created and had changed her password on her Instagram account, but it didn't work. To make matters worse, she then informed me that it was also happening to 17 of her classmates.

After listening to the situation, I asked the following questions:

- Did you tell your parents that your account had been hacked?
- I asked if this happened on a Real Instagram (RINSTA) or Fake Instagram (FINSTA) account?
- I asked if she was using Two Factor Authentication (2FA) on either of the accounts.

Two Factor Authentication, or Multi-Factor Authentication (MFA), is a security measure that is put into place for a person to verify their digital identity for accessing a website, e-mail, application, entrance to a building, and even a computer. You, the user, will have to provide two or more factors of information before you are granted access. These factors are knowledge (something only the user knows), possession (something only the user has), and inherence (something only the user is). Knowledge is your PIN or password that is used to access a resource. Possession is your token, ID Card, or ATM Card. Inherence is your finger print, face, voice, an even your keystroke dynamics.

This form of authentication has been incorporated more over the past two years because of the rise in ransomware attacks, cyber-crime, and because of the Corona Virus Pandemic. Since the beginning of the pandemic, many companies and organizations have instituted tele-working standards for their employees and schools across the country began tele-learning for all of their students. Multi-Factor Authentication provides a company, agency, or school, an extra layer of cybersecurity defense to protect data and equipment from being accessed by bad actors. (Continued on Page 5, The Cyber Viking Syslogs)



“Multi-Factor Authentication provides a company, agency, or school, an extra layer of cybersecurity defense to protect data and equipment from being accessed by bad actors.



“The future of cyber security is critical to our national security and it’s inspiring to see our students take such an interest in it.”



U.S. REPRESENTATIVE GONZALES



CONGRESSMAN GONZALES GIVING FINAL THOUGHTS BEFORE LEAVING.

Congressman Gonzales then opened the floor for discussion. The CyberPatriot team asked him questions ranging from his experiences while serving in the Navy to what his thoughts are on current cyber threats against

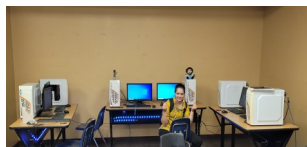
the United States. After the question-and-answer session he spoke with team members individually and took pictures with the team. On his Facebook Page, Congressman Gonzales posted, “Great to join the Medina Valley CyberPatriot Team for one of their practices yesterday. The future of cybersecurity is critical to our national security and it’s inspiring to see our students take such an interest in it.”

I would like to thank U.S. Representative Tony Gonzales Texas District 23 for kicking off the Medina Valley AFJROTC competition season. He has given the cadets encouragement to do their best this season.

WELCOME TO VAL-HALL-AH

As I stated on the front page of this newsletter this year has been a whirlwind of activity, and most of the activity was centered around the AFJROTC moving into their new cyber practice/competition building. Lt Col Spracale, team members, and I spent the few weeks preparing the room and working with the MVISD Information Technology Department to ensure the computers were working and connected to the network. We had the room ready before the first competition, but it needed a name. The team decided to name our cyber building Val-HALL-ah because Coach Frank “Odin” Hall is known as The Cyber Viking, and the entire AFJROTC CyberPatriot team are members of the Cyber Viking’s crew.

TEAM 1 AREA



TEAM 2 AREA



TEAM 3 AREA



FULL VIEW OF VAL-HALL-AH



THE CYBER VIKING SYSLOGS

My team member did not know if Instagram would allow for 2FA, and since I do not have an Instagram account, I had to perform some quick research (I asked my wife because she is smarter than Google). After going to the Instagram Help Center website(<https://help.instagram.com/566810106808145>), I was able to find the instructions on enabling 2FA for



2FA ILLUSTRATION



the app. I also told her to set up 2FA on her mobile device(s) and to change the password for those devices. Since Instagram is primarily used on smartphones, the odds that the hacker may have tried to gain access to the device was highly probable. I instructed her to forward this information to her 17 classmates whose accounts had also been hacked.

Then I forwarded these instructions to all of my team members, Mrs. Webb, the Cybersecurity teacher at Medina Valley High School, and posted the information onto the team Facebook page. As of December 30, 2021, my team member's Instagram account has not been compromised since enabling 2FA.

For all of my team members, if any of your accounts or devices get hacked, immediately tell your parents what has happened because safeguarding your personal information is critical. If you are at school when you discover that your school account has been hacked, tell a teacher or administrator because they will have a set of procedures they will need to follow in order to protect their data and equipment. Finally, you can always contact me (Coach Hall) for technical advice.

In conclusion, if an app or web service has the ability to use 2FA please enable and configure this important layer of protections to secure your personal information.

AFCEA ALAMO ACE CONFERENCE



MV CP TEAM MEMBERS AT ALAMO ACE

On November 16, 2021, the members of the Medina Valley CyberPatriot team were invited to the 2021 Alamo AFCEA Chapter Event (Alamo ACE) Cybersecurity Conference. Our team members participated in the High School Capture the Flag competition. The format of the CTF and the complexity, in my opinion, was brilliant. The team went into the competition with little to no knowledge of how to use the tools that were needed to solve the puzzles. This experience took them out of their comfort zone and

made them learn new methods of problem solving and how to use cyber tools. The CTF taught them how to work more closely as a team, how to refine their researching skills while they gained knowledge and boosted their confidence by solving the puzzles. I have told my team members many times that you do not need to remember everything about networking, computers, or using cyber tools. The most important thing is knowing how to find the answers and having a good team to help you solve problems. This CTF has proved my point to the team.



THE CYBER VIKING IS PHOTOBOMBING



GOOFING OFF AFTER THE CTF



THE TEAMS DURING THE CTF

“For all of my team members, if any of your accounts or devices get hacked, immediately tell your parents what has happened because safeguarding your personal information is critical. ”



Medina Valley High School

CyberPatriot Team

We are the Medina Valley CyberPatriots!! We are the cyber warriors that relentlessly defend networks from attack. Our cyber hunting skills cannot be matched. We find threats, eliminate them, and strategically launch counter attacks against our cyber enemies. We are CyberPatriots!!

Medina Valley High School

CyberPatriot Team

Facebook Page Address:
www.facebook.com/tx20009MVCPTeam/

High School Website Link:
<https://www.mvisd.com/Page/3001>

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Angela M. Hall—Chief Editor

ABOUT THE MVHS CYBERPATRIOT TEAM

The Vision

The vision of the Medina Valley CyberPatriots program is to promote cyber awareness, computer security practices, and cyber ethics. All of these are essential attributes for creating a secure network infrastructure, teaching the students how to detect threats, and how to defend against cyber-attacks in a safe virtual environment.

The skills and knowledge the students will gain from participating in this program will give them an advantage to obtain information technology certifications, scholarships in computer related fields of study, and ultimately provide an opportunity to start a great career in information technology and cyber security.

The Mission

The mission of the Medina Valley CyberPatriot program is the proper instruction and implementation of information technology principals and cyber security practices. All students will be taught how to use various operating systems, interconnecting network devices, and how to secure the entire infrastructure. The students will also be taught how to properly use tools and methodologies to assess and troubleshoot problems that range from inoperable workstations to misconfigured networking equipment. These are the skills that will be necessary to compete in the CyberPatriot competitions and will enable us to advance to each round and ultimately to the national finals.