



A PLATINUM YEAR

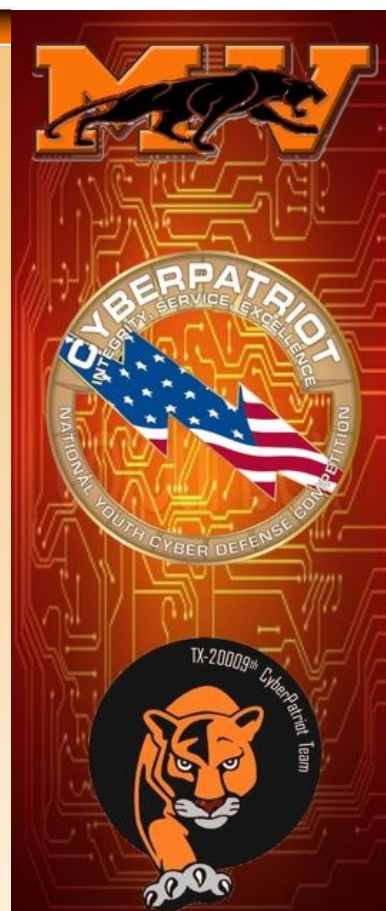
Welcome back to another exciting cyber season. I was glad to see many returning team members and such a large number of cadets that wanted to join the team. This year the Medina Valley AFJROTC has four teams participating in the CyberPatriot Youth Cyber Defense Competition.

Our team has just completed the second round of the CyberPatriot competition and we have received our tier results. For a second year, the Cyb3r B0mb3rs have maintained their status as a Platinum Tier team. In their second year as part of the CyberPatriot program, Dec0d1ng Dump1ngs, our all-girl team, has made the jump from the Gold Tier to the Platinum Tier. Team 3, our team of first year cadets, has done something no other team in MVHS AFJROTC CyberPatriot team history has done; they made Platinum Tier their first year in the competition. Team four, our team of three cadets, has made the jump from the Silver Tier to the Gold Tier. Congratulations to all four of our teams on their accomplishments.

In addition to competition, our team members have been making a splash in the San Antonio cyber ecosystem. In late October, two of our team members attended the Alamo Armed Forces Communications and Electronics Association (AFCEA), Emerging Leaders, Mentor Protégé Night at Topgolf. These two team members took part in this speed mentoring event with many leaders from the San Antonio cyber community and were able to meet other CyberPatriot teams from the area. Also, for a second consecutive year, members of the AFJROTC and Open CyberPatriot teams were invited to take part in the Deloitte Capture the Flag (CTF) at the 2022 Alamo ACE. These team members were able to take part in a collegiate level cyber competition, and they had the opportunity to meet many government agencies, private sector cyber companies, and cybersecurity professionals from across the country. Two team members have written an article about the events for this edition of the "Bits and Bytes".

The team is having a great start to the season and is making an impact in the national and local cybersecurity communities.

Cyber Like A Viking!
Coach Frank "Odin" Hall



INSIDE THIS ISSUE

A PLATINUM
YEAR...1

CYBERPATRIOT
TIERS...2

TEAM PIC-
TURES....2

ALAMO ACE EMERG-
ING LEADERS ...3

LESSON LEARNED..4

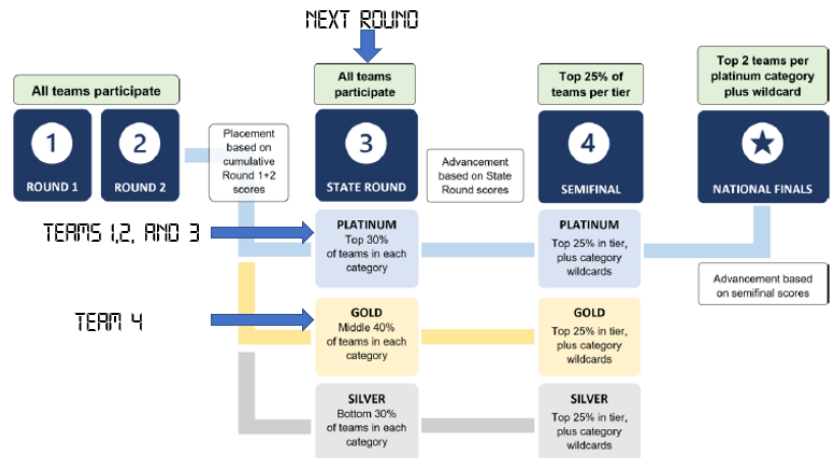
TEAM INFO.....5

“Each team will compete against other teams in their tier for a State award; in our case the cyber battle for Texas. To advance to the semi-final round each team will need to be in the top 25% of their skill tier. ”



CYBERPATRIOT TIERS FOR COMPETITION

This year we have three Platinum Tier teams and one Gold Tier team participating in CyberPatriot XV, but you may be asking yourselves what exactly does that mean? The Platinum Tier are in the top 30% of teams in the All Service Division. The Platinum Tier teams are the only teams eligible to qualify for the National Finals Competition. The Gold Tier consists of the middle 40% of teams from the All Service Division. Teams are placed into tiers based on the cumulative scores from Round 1 and Round 2.



DEPICTION OF THE TIERING AND TEAM ADVANCEMENT FOR THE ALL SERVICE DIVISION.

All of the teams are preparing to take part in the State Round (Round 3) of the CyberPatriot competition. Each team will compete against other teams in their tier for a State award; in our case the cyber battle for Texas. To advance to the semi-final round each team will need to be in the top 25% of their skill tier. The State Round will begin on December 9, 2022 and will end on December 11, 2022. The Medina Valley AFJROTC CyberPatriot teams will be competing on December 9th.



TEAM PICTURE
BEFORE THE START OF
ROUND 1

TEAM PICTURE
AFTER THE END OF
ROUND 2



ALAMO ACE EMERGING LEADERS MENTOR/PROTEGE NIGHT BY CADET SENIOR AIRMAN ZUNIGA

October 27, 2022, there was an event at Topgolf called hosted the Alamo AFCEA, Emerging Leaders, called Mentor Protege Night. This event was all about the world of cyber security and things relating to cyber. There were many important people who explained their job titles and what they do for a living. They were also willing to answer any questions we had.



CADET ZUNIGA AND CADET WILKIN WITH
STUDENTS FROM CAST TECH

I am glad that I convinced a fellow team member, Raymond, to join me at the event. When we arrived, we were each given a raffle ticket that would be used for a raffle at the end of the event. Coach Hall set me and Raymond at a table with other highschoolers who went to a local cyber academy, CAST Tech. We all introduced ourselves and talked about the differences between our schools. After some time, food was served and everyone lined up to go eat.

After everyone finished eating, they started the speed mentoring. The mentors would stay at their designated table, while the rest of the people would switch to the next table in line. We would introduce ourselves and the mentors would do the same. The mentors would go in detail of their jobs and what they do. They would ask us questions like "What interests you in cyber?", "Do you have any future plans?", "Are you considering pursuing a career in cyber?". Typically, we would stay at each table for 10 minutes then rotate. This was a great way to socialize and learn more about what opportunities are out there in the cyber security field. It also showed me how important cyber security really is to just simple everyday things.

At the end of the speed mentoring, they started the raffle. They started out with small prizes such as water bottles and other merchandise. Raymond had actually won one of the water bottles. Multiple times I was just 1 or 2 numbers off from a winning ticket. Eventually, they moved onto the biggest and final prize which was a 55-inch TV. They called out the ticket number. I was looking at my ticket and all the numbers matched the winning ticket, for a second I didn't do anything until Raymond yelled at me with excitement "That's your ticket! Go up there!". As soon as I got up and claimed that's my ticket the whole room got loud with excitement and cheering. I had won a 55' inch TV!



AFCEA MEMBERS, CADET ZUNIGA, AND COACH HALL,
AFTER CADET ZUNIGA WON A 55" TELEVISION

Overall, I did not regret going to the event. It was a great opportunity to get out there and learn. It was a great inspiration to me to keep me pursuing cyber security. Talking with very important people in this field of work showed me what opportunities I should take. Plus, winning a brand-new TV was a pretty nice bonus. Needless to say, when the opportunity to go to events like this appears I will definitely take it.

"This was a great way to socialize and learn more about what opportunities are out there in the cyber security field."



“This competition was to help you learn, to see a different type of cyber competition, and apply what you learn here to the CyberPatriot competition”



LESSON LEARNED BY CADET TECHNICAL SERGEANT LEE



THE CYBER BERSERKER CTF TEAM

later. I able to attend the meeting about the current developments in cybersecurity, but I do know a bit about the competition which we participated.

The only way to explain that is to start from when me and my friends first got our invitation to go to the Alamo ACE. This happened after our second round for our normal competitions that we do during the school year. Our CyberPatriot Team coach, Coach Hall, brought us together and asked us if we wanted to be a part of the Alamo ACE cybersecurity competition. During my time on the Cyber Patriot team, I completely neglected these kinds of offers, but this year I really wanted to get my face out there so I decided yes, I want to go. Coach Hall explained that the competition was a Jeopardy style competition, which means we have a bunch of categories to choose from that have varying levels of difficulty to gain points. Over the two weeks we had to wait and research for the competition, I really didn't do that much for it. In all honesty I slacked on that end thinking that this competition would be fairly easy, and I would soon learn that was in fact not the case.

The day for competition arrived, we stacked our group into a suburban vehicle and drove off to the La Cantera Resort. There were two team from Medina Valley (MV) participating in the CTF. A team consisting of team members from the MV Open Division CyberPatriot team, and team member from my team the MV AFJROTC CyberPatriot team, which consisted of me (Kramer), Bubbles, Cannonball, and The Archer which are our cyber nicknames. Once we arrived, we checked-in and went to our competition room where we sat down and were able to take a breather before setting up for the competition. The competition was web-based, so we had to be able to connect to the internet to compete in the CTF. The internet was sluggish and not properly. I was getting so frustrated at our table trying to get the WiFi to work. Coach Hall, he tried to a few things to ensure that we were connected, including using one of his own wireless network cards. Finally, he smiled and laughed saying that there has to be something else going on because everyone was having network issues. This did not make me feel any less frustrated.

Eventually, my friend Cannonball came with the genius idea of using his hotspot which allowed us all to actually start competing. Sometime later Coach Hall told us the he learned the cause of the connectivity issues. Just before the competition was going to start their WiFi technology had a malfunction which destroyed some of their gear, so they were trying to replace their equipment while we competed. We began working on the CTF and were met with some serious challenges and all I can say is that I don't think I have ever been more confused than on that day. None of us got a single point, but it was all ok in the end because what Coach Hall told us that “This competition was to help you learn, to see a different type of cyber competition, and apply what you learn here to apply it to the CyberPatriot competition.”

After four disheartening hours of pure struggle, we packed up and began exploring all the vendor booths. We walked around and got to see some really cool technology that had been developed while also becoming “Swag Gremlins” a term we came up with as we grabbed every free item that booths were handing out. One of my favorite booths was these guys showing off this really neat program that changed your password every hour or so to make sure that your stuff wouldn't be hacked. After that, we headed home, our bags filled with all sorts of knick-knacks. I really enjoyed my experience their even though the beginning was frustrating, and the biggest lesson that I took away from their was I have a lot to learn about cybersecurity.

My name is Dylan Lee, I am currently a Medina Valley High School in Castroville, Texas. I joined AFJROTC my freshman year and signed up to be a part of their cybersecurity team, which I have been a member of for the past three years. My fellow CyberPatriots and I got an invitation to go to the Alamo ACE, which was held at the La Cantera Resort in San Antonio. The whole event consisted of a cyber competition, which is what me and my friends did, along with vendor booths. There were also a lot of technological innovations at these booths being shown off, but I will go ahead and explain that

THE CYBER VIKING SYSLOGS

CAPTURE THE FLAG PRACTICE AND COMPETITION



Many of the new and returning team members may not know what a Capture the Flag (CTF) is or why students and cyber professionals participate in these cyber events. At its core, a CTF is a way to test an individual or teams' knowledge in a competition or practice exercise. A CTF practice site or competition is a great way to learn new skills that are useful in cybersecurity. They are also the perfect way to enhance your knowledge about the use of techniques that are used to find an answer to a problem. Our team does participate in one or two CTF competitions every season such as Pico CTF or SANS Cyber-Start America. These competition CTF styles are known as "Jeopardy Style" because they have numerous categories such as Encryption, Steganography, Reverse Engineering, Forensics, and Basic Cyber Knowledge; these categories can be different in each CTF.

As I mentioned in the previous paragraph there are practice CTF websites that you can use to learn the skills necessary to compete in a CTF. Here are a few:

- Pico CTF – Pico CTF will let you play and learn from previous competitions, and they publish a walkthrough after each competition has ended.
- OverTheWire – In OverTheWire you can select from different Wargames to play. The first Wargame is Bandit "The Bandit wargame is aimed at absolute beginners. It will teach the basics needed to be able to play other wargames."
- HackTheBox – "An online cybersecurity training platform that allows individuals, businesses, universities, and all kinds of organizations all around the world to level up their offensive and defensive security skills through a fully gamified and engaging learning environment."
- High School CTF (HSCTF) – Is a CTF that was created by high school students for high school students. HSCTF does have a practice gym for you to learn.

Many times, CTF creators do provide a walkthrough or answer key. You can usually Google the answer or watch a video on how to solve the puzzle if you get stuck.

The one requirement for any CTF is that you must use a Linux virtual machine. In OverTheWire you can use an Ubuntu virtual machine while other competitions may require you to use Kali Linux.

I encourage all of our team members to join us when we enroll in a CTF or try one on your own. You have many people such as your team members and me that are willing to help you.

Cyber Like A Viking!
Coach Frank "Odin" Hall

"A CTF practice site or competition is a great way to learn new skills that are useful in cybersecurity. They are also the perfect way to enhance your knowledge about the use of techniques..."



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

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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.