



I introduce to you, Megan Roddie. She is a practicing cyber security professional, emerging authority on neurodiversity in the workplace, and one of TXDPS Cyber Security's very own. This summer, Megan spoke at the 2017 Defcon security convention. As a security enthusiast myself, I was beyond excited when she agreed to relive her Defcon experience in the form of a one-on-one interview with me!

Defcon and the Wall of Sheep.

Defcon attracts some of the world's best hacks, computer scientists, and security enthusiasts including law enforcement. At 25,000+ attendees and growing, if you intend to make it in the field or want to learn something new about security, then it does not get any better than Defcon.

Defcon consists of 'tracks' like any normal conference but it also includes 'Villages'.

Villages are communities dedicated to a specific topic or project. One of these Villages is the Wall of Sheep (WOS). With its dimly lit underground vibe, the WOS boasts an impressive electric-house style hangout for all hacker-types. Attendees watch presentations; listen to music; and best of all, experience a sanitized list of all credentials intercepted at the convention. This list of 'Sheep' is projected on a huge screen for all attendees to experience, thus dubbed the "Wall Of Sheep". If you attend the convention, the WOS is definitely worth checking out, if not periodically just to see if your credentials are compromised as well. Check out their official twitter account [here](#).

After she submitted her presentation for review, the WOS instantly selected and approved it. Her talk was an instant hit...

Interview continues on [page 4](#).



Homeland Security

DHS Statement on the Issuance of Binding Operational Directive 17-01

After careful consideration of available information and consultation with interagency partners, Acting Secretary of Homeland Security Elaine Duke today issued a Binding Operational Directive (BOD) directing Federal Executive Branch departments and agencies to take actions related to the use or presence of information security products, solutions, and services supplied directly or indirectly by AO Kaspersky Lab or related entities.

The BOD calls on departments and agencies to identify any use or presence of Kaspersky products on their information systems in the next 30 days, to develop detailed plans to remove and discontinue present and future use of the products in the next 60 days, and at 90 days from the date of this directive, unless directed otherwise by DHS based on new information, to begin to implement the agency plans to discontinue use and remove the products from information systems. Read the official DHS statement [here](#).

007

FROM
RUSSIA
WITH
LOVE



The Federal Trade Commission (FTC) has released an alert on phishing attacks related to the Equifax data breach. Phishing attacks try to trick message recipients into sharing sensitive information with cyber criminals. The FTC warns consumers to be wary of calls or emails purporting to be from Equifax agents. Legitimate Equifax representatives will not contact consumers to ask for verification of their information.

The National Cyber Security Centre (NCSC) also released a statement on the Equifax breach, warning potential victims to be vigilant against phishing because the volume of scam emails often increases after major data breaches. Scammers can use stolen data to make phishing messages seem more credible and trick users into

Potential Phishing
Scams Related
to Equifax

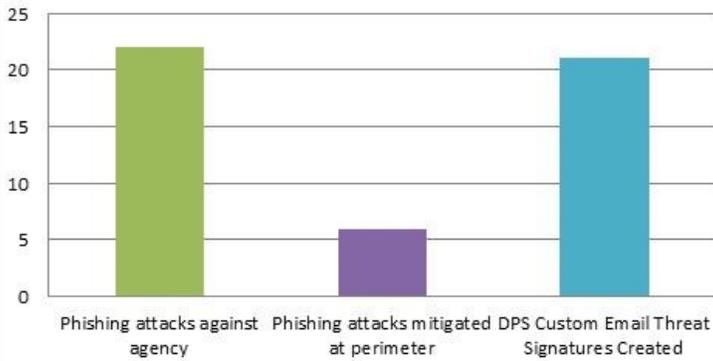
revealing more data. US-CERT encourages consumers to report fraudulent calls and emails to the FTC Complaint Assistant.

For more information read more [here](#).

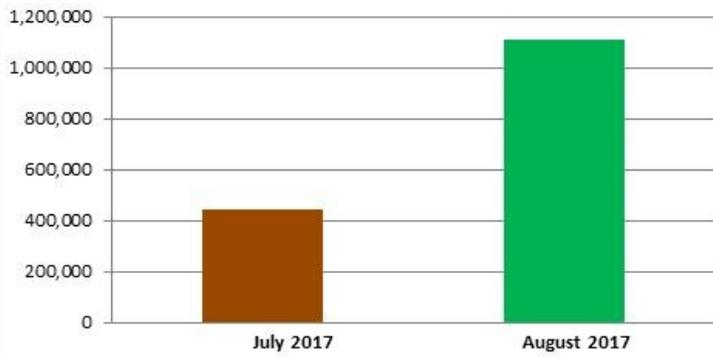
Secure.
Protect.
Inform.

< Cyber Stats />

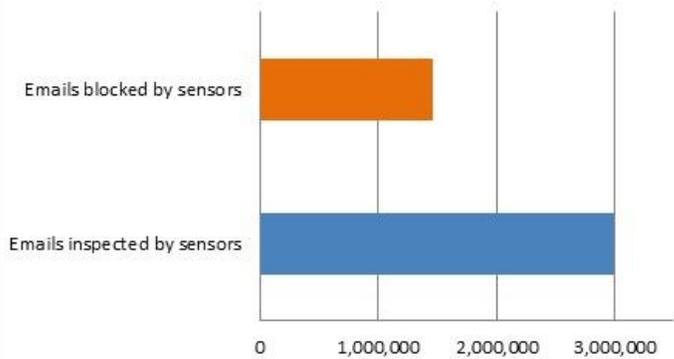
August 2017



Malicious URLs Blocked



August 2017



Megan, tell me about Defcon – What was your favorite thing?

I was able to help the WOS engineers with the Honey Pot Project. It is a CTF (Capture the Flag) style hacking challenge but we include "honey pots" to distract contestants.

How did you feel before you spoke?

I was excited and anxious. I like public speaking but do not really enjoy individualy talking to people. Both introverted and extroverted, I consider myself an ambivert!

What was your presentation about?

It is about the benefits of employing individuals with high functioning autism and increasing neurodiversity in the workplace. In the past, society viewed autism as a handicap, but I want to 'flip' that coin.



"Strengthening Your Security Operations Team By Leveraging Neurodiversity" slideshow [here](#).

What are the attributes of someone with High Functioning Autism?

We are usually highly productive; possess an extreme attention to detail; passionate; hyper-focused; and overall, very logical. However, we do not always understand certain or basic social queues. Therefore, I may not interpret the true meaning of a question or my response may be too blunt. Being 'direct' is often interpreted as rude but is not my

intent. Most issues boil down to simple miscommunications during human interaction.

How is your DPS experience?

It has been great! I have the best management. We quickly adapted to each other.

Do you have any tips for the Managers out there?

Of course, managerial staff should consider the following:

1. Think positive.
Look at the benefits we bring, not only the challenges
2. Diversity is good.
Increasing workplace neurodiversity is not a bad thing

Do you have any advice for people with high functioning autism in the

workplace?

Identify and play to your strengths.
Determine what you are best at and do it.
Never give up.

Megan is an exceptional woman and possesses a great work ethic. At the current age of 20 years young, she is a hard worker and full of potential. If you have the opportunity, I recommend getting to know her and listen to her story. She is an inspiration to many and continues to positively affect the lives of others via online autism support communities.

Megan will graduate with her Master's degree May 2018.

Crypto Challenge 3.0 Review:

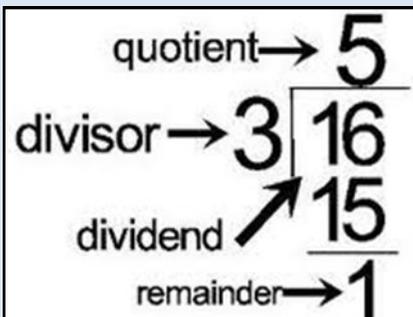
Hiking over Hill-Ciphers

Kudos to all that attempted and completed the crypto challenge 3.0! Developed in 1929 by Lester Hill, the Hill cipher is an example of a block cipher. A block cipher is a cipher in which groups of letters are 'enciphered' together in equal length blocks. Here is the tutorial for conquering the Hill cipher:

Modulo.

Before we go any further, it is important to understand how the modulo (aka. mod) function operates. Modulo is extremely important because modern cryptography frequently incorporates mod into algorithms. Mod calculates the **remaining value** of two integers divided together. It is **not the quotient**. Simply divide until you cannot divide anymore-using whole numbers. The remaining whole number is the mod value: Simple enough right?

Let us be honest, examples work better.



$$A \pmod{B} = C$$

$$A = 16$$

$$B = 3$$

$$16 \pmod{3} = 1$$

$$C = 1$$

Encryption.

Since we have mastered modulo operations, encryption is our next step.

Hill ciphers use a predetermined **matrix** key to encrypt and decrypt the text. Using the matrix, message text is converted into numbers then back into cipher text.

$$\begin{pmatrix} 3 & 3 \\ 2 & 5 \end{pmatrix}$$

1. Separate Message text into groups of two.

$$\begin{pmatrix} S \\ A \end{pmatrix} \begin{pmatrix} M \\ P \end{pmatrix} \begin{pmatrix} L \\ E \end{pmatrix} \begin{pmatrix} T \\ E \end{pmatrix} \begin{pmatrix} X \\ T \end{pmatrix}$$

2. Convert message text groups into numbers using their corresponding values. (A = 0, Z = 25)

A	B	C	D	E	F	G	H	I	J	K	L	M
↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
0	1	2	3	4	5	6	7	8	9	10	11	12
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
13	14	15	16	17	18	19	20	21	22	23	24	25

Review

Continued...

$$\begin{pmatrix} S \\ A \end{pmatrix} \begin{pmatrix} M \\ P \end{pmatrix} \begin{pmatrix} L \\ E \end{pmatrix} \begin{pmatrix} T \\ E \end{pmatrix} \begin{pmatrix} X \\ T \end{pmatrix} = \begin{pmatrix} 18 \\ 0 \end{pmatrix} \begin{pmatrix} 12 \\ 15 \end{pmatrix} \begin{pmatrix} 11 \\ 4 \end{pmatrix} \begin{pmatrix} 19 \\ 4 \end{pmatrix} \begin{pmatrix} 23 \\ 19 \end{pmatrix}$$

3. Encrypt each text pair using formula:

Cipher Text = (Message Text * Key) Mod 26

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} ax + by \\ cx + dy \end{pmatrix}$$

$$\begin{pmatrix} 3 & 3 \\ 2 & 5 \end{pmatrix} \begin{pmatrix} 18 \\ 0 \end{pmatrix} = \begin{pmatrix} 108 \\ 36 \end{pmatrix} \text{Mod } 26 \\ = \begin{pmatrix} 4 \\ 10 \end{pmatrix}$$

4. Convert the calculated value into cipher text

$$\begin{pmatrix} 4 \\ 10 \end{pmatrix} = \begin{pmatrix} E \\ K \end{pmatrix}$$

5. *Rinse and Repeat until all message text is cipher text!*

Decryption.

Decryption is the same process as encryption except you invert the matrix (a.k.a **Adjugate matrix**)

$$\text{adj} \begin{pmatrix} a & b \\ c & d \end{pmatrix} = \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$$

$$\begin{pmatrix} 3 & 3 \\ 2 & 5 \end{pmatrix} = \begin{pmatrix} 5 & -3 \\ -2 & 3 \end{pmatrix}$$

Hill ciphers utilize linear algebra but it can be completed with pen and paper: no computer necessary. At the end of the day, it is just a substitution cipher.

Continuing tradition, I won't reveal the answer to last month's challenge. However, all you need to do is plug and chug the crypto challenge 3.0 Message into the decryption process!

Don't get discouraged and contact me if you need help.

Newsletter Support

GRP_Cyber_Risk@dps.texas.gov

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