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WOMEN IN CYBERSECURITY 2022 REPORT

HELP WANTED: FEMALE CYBERCRIME FIGHTERS; MILLIONS OF OPENINGS.

CYBERSECURITY VENTURES

WOMEN ON THE RISE

Women hold 25 percent of cybersecurity jobs globally in 2022, up from 20 percent in 2019, and around 10 percent in 2013.

Steve Morgan, founder of Cybersecurity Ventures

We predict women will represent 30 percent of the global cybersecurity workforce by 2025, and that will reach 35 percent by 2031. This goes beyond securing corporate networks and includes IoT, IIoT and ICS security, and cybersecurity for medical, automotive , aviation , military defense, and other.

– Steve Morgan, founder of Cybersecurity Ventures and Editor-in-Chief at Cybercrime Magazine

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INTRODUCTION

The issues surrounding a lack of women in the cybersecurity field have been known for years, but ramping up recruitment isn't just about increasing diversity: it now has implications for security in the future on every level.

Charlie Osborne, Editor-at-Large
Cybercrime Magazine

The emergence of the internet, mobile networking, and enhanced connectivity have proven to be a catalyst for business growth, new ventures, and innovation in everything from travel to healthcare and education.

However, whenever new technology appears, so do those who would exploit it for their own ends.

INTRODUCTION

Cybersecurity has become everyone's problem – it isn't just about individuals regularly changing their passwords. The enterprise, critical infrastructure providers, and tech giants upon which the modern economy relies also need to attract and retain talent in cybersecurity to safeguard core services and consumer data.

We have a problem. There is a severe talent shortage with millions of unfilled cybersecurity jobs, placing our networks, data, and infrastructure at risk.

A solution is staring us in the face, with a pool of potential talent remaining untapped. It is up to us to lure more women into the cybersecurity realm; to do so; we need to change the cultural conversation, break down the barriers to entry, and promote inclusive work environments and expectations.

This report is authored by Charlie Osborne, *with research from Cybersecurity Ventures.*

HACKING THE TALENT GAP

Cybersecurity Ventures estimates that in 2022, 3.5 million cybersecurity roles will remain vacant. Furthermore, we expect this to hold steady through 2025.

This lack of skilled workers is a continual global supply and demand issue, with the need for cybersecurity staff increasing yearly. The number of jobs available in our field has risen by 350 percent since 2013.

Furthermore, the United States Bureau of Labor Statistics estimates that over the next decade, information security analysts will be among the 10th fastest-growing roles in the U.S. It is likely other countries will follow suit.

After Cybersecurity Ventures examined the current state of our industry, we found that women held approximately a quarter of cybersecurity roles globally in 2022, up from 20 percent in 2019, and around 10 percent in 2013.

HACKING THE TALENT GAP

Cybersecurity Ventures predicts women will hold 30 percent of cybersecurity jobs globally by 2025.
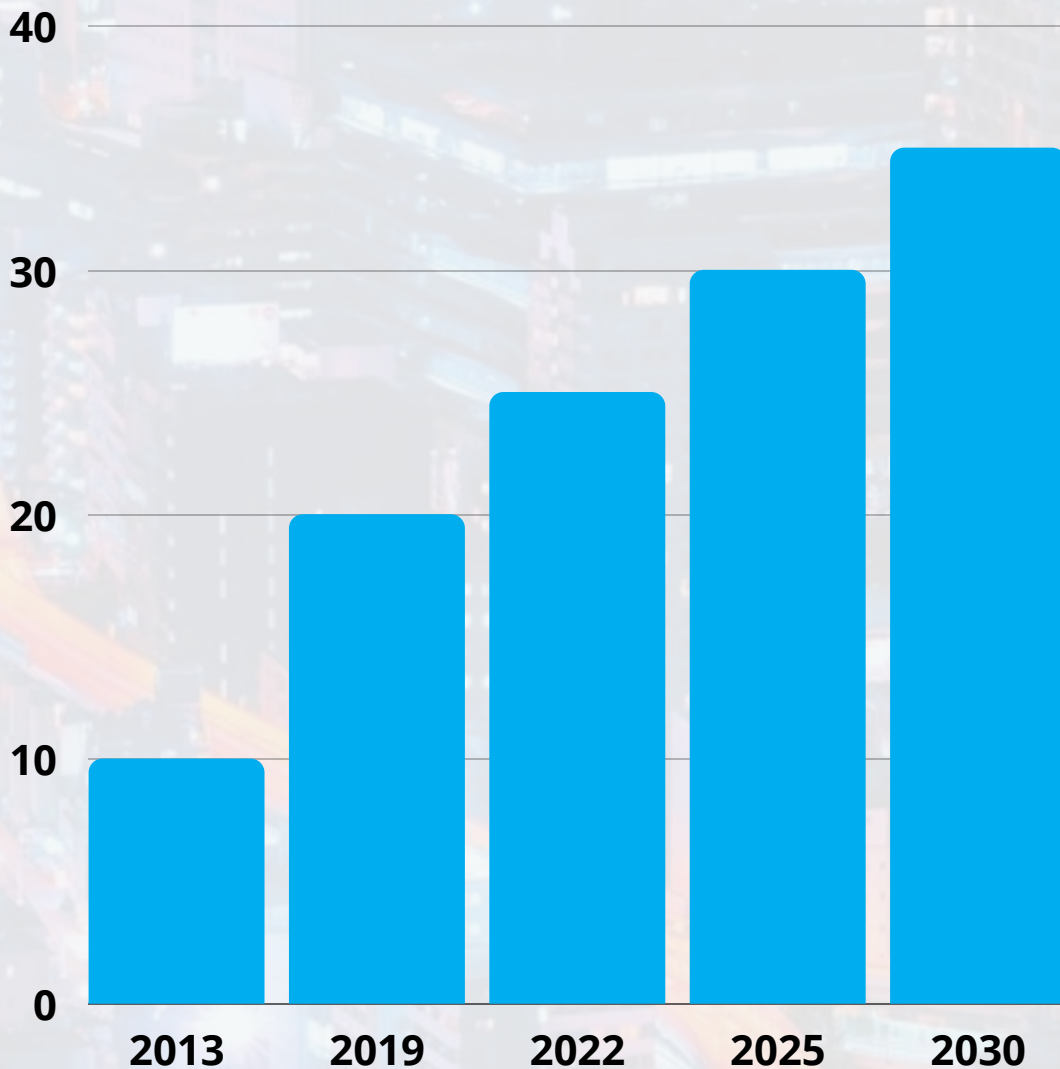
TODAY'S TRAILBLAZERS

"Cyber is so important because the digital age is recreating everything around us. And women are not at the table or behind the computer screen, rewriting the world around us. We're half of the population" says <u>Sylvia Acevedo</u>, rocket scientist, Qualcomm board member, former CEO at Girl Scouts of the USA, and one of Forbes Top Women in Tech.

Many women in cybersecurity are trailblazers who have radically transformed the industry and made invaluable contributions. Some of them appear in the book "<u>Women Know Cyber: 100 Fascinating Females Fighting Cybercrime</u>."

"I'm so inspired by these pioneering women and encouraged by their stories, adds Acevedo. "Because of out-of-the-box thinkers , innovators, and leaders like them, the fight against cybercrime is entering a new era where women are confidently adding their voices to the mix— not just creating a path for themselves, but opening up opportunities for others forging ahead in their wake.

TODAY'S TRAILBLAZERS

Who's Who (full list):

- Alissa (Dr Jay) Abdullah, PhD — Deputy Chief Security Officer & SVP at Mastercard
- Leslie Carhart —Director of Incident Response at Dragos, Inc.
- Joy Chik — President, Identity & Network Access at Microsoft
- Deneen DeFiore — VP & CISO at United Airlines, former SVP & CISO at GE Aviation
- Kyla Guru — Founder, Bits N' Bytes Cybersecurity Education, Student at Stanford University
- Theresa Payton — Former CIO at The White House, author, speaker, cybersecurity expert
- Nicole Perlroth — Author of "This Is How They Tell Me The World Ends."
- Rinki Sethi — VP & CISO at Bill.com. former VP & CISO at Twitter.
- Wendi Whitmore — SVP, Unit 42 at Palo Alto Networks
- Kim Zetter — Author of "Countdown to Zero Day: Stuxnet and the Launch of the World's First Digital Weapon"

THE STEM CONVERSATION

Women understand cyber. They understand technology. They are no less capable than men, but discrimination, a lack of awareness, and a failure to encourage the next generation to promote cybersecurity as an attractive career path all contribute to fewer women entering the field.

So what are we doing wrong?

"A lot of what drives who's interested in cyber-security has to do with how we talk about it. If you look at the way role definitions are written and how it's portrayed in the world, it is portrayed in a very specific light. And that light is highly technical (and there's nothing wrong with that), but it's written in words that don't always appeal to a broader audience" says Emily Mossburg, Global Cyber Leader at Deloitte.

Unfortunately, there has long been negative commentary and perspectives surrounding girls and women entering Science, Technology, Engineering,

THE STEM CONVERSATION

and Math (STEM) fields. The issue is systemic across the West, with women either discouraged from entering STEM careers entirely, facing barriers to progression, or discrimination in the workplace.

The AAUW estimates that women comprise only 28 percent of the workforce in STEM. In addition, men "vastly outnumber" women majoring in most college STEM fields. The gender gap is most prevalent in computer science and engineering -- alongside many of the highest-paying roles in these fields.

The gender gap becomes a chasm when we consider the top roles in cybersecurity. For example, our research found that women held only 17 percent of Chief Information Security Officer (CISO) roles at Fortune 500 companies. Said otherwise, women held only 85 of 500 available CISO positions.

If you look at media reports, you see dark stock images of men in hoodies, typing away in basements. Logos, wording, and branding in cybersecurity are

THE STEM CONVERSATION

often what we consider 'masculine,' and this is also even found in threat terminology – such as in "Man-in-The-Middle" (MITM) attacks.

We must change the perception and awareness of STEM fields to encourage gender diversity. More awareness is required to show young girls and women that there are role models out there, including women in cybersecurity leadership roles, to encourage them to follow in their footsteps.

Cybersecurity must be seen as an exciting and fulfilling career, not just for the logical and technically minded.

THE STEM CONVERSATION

Instead, we should be promoting how rich and diverse a field cybersecurity is, and we need to emphasize that it is an area that is constantly evolving, changing, and one that requires different skill sets.

Cybersecurity needs far more than programmers. It requires creative and inventive minds, designers, communicators, academics, and those trained in business. You can find roles in cybersecurity ranging from data analysis to teaching, consultancy to risk management, and talent acquisition to sales – as long as you know these opportunities are available.

Thankfully, the disproportion of men and women in cybersecurity roles has not gone unnoticed. As a result, scores of initiatives and grant programs targeting underrepresented groups in our field are now active.

BALANCING THE NUMBERS

"Cyber has a lot of different facets. I think it's important to take a step back and introduce folks to this world and what the opportunities are as it's not so scary. They think it's just someone coding on a computer in the background in their basement and there's a lot more to it we have to add." says Teresa Zielinski, SVP, Global CISO & Product Security at GE Gas Power.

Cybersecurity isn't just about knowing how to code and being a master programmer. Many roles are available that can appeal to a broader group – male, female, technical, creative, or otherwise – and the industry needs to start changing the stereotypes to attract more talent.

Cybercrime is the fastest-growing type of crime globally, and Cybersecurity Ventures estimates that in 2021 alone, $6 trillion was lost worldwide due to cybercrime, or $500 billion a month. Furthermore, organizations may face cybercrime damage costs of up to $10.5 trillion annually by 2025.

BALANCING THE NUMBERS

What makes cybercrime different from many other forms of crime, whether violent or otherwise, however, is the human factor – and this is a resource we can capitalize upon if we destroy old perspectives and stereotypes, and promote more modern ways of thought.

"When you're faced against an adversary that's always thinking about new ways to attack, the more diversity of thought, the better your chances for a successful outcome" says Ron Green, EVP & Chief Security Officer at Mastercard.

Inclusion and diversity aren't just buzzwords. They are essential to connecting all the dots in defense and beyond – and when your criminal adversaries are from different cultural and economic backgrounds, you also need a diverse team to counter them.

Cybersecurity Ventures predicts that women will represent 30 percent of the global cybersecurity workforce by 2025, reaching 35 percent by 2031.

BALANCING THE NUMBERS

Our latest research figures are based on in-depth discussions with numerous industry experts in cybersecurity and human talent, third-party reports, surveys, and media sources – and it reveals that while the situation is improving, it is nowhere near enough.

When you don't appeal to the best part of half of the population, you miss out on key talent and perspectives that can help you make full, informed decisions in cybersecurity. If you have a diverse team, however, you can better discover blind spots, defend your networks, and contribute to the space as a whole – whether this is through solutions development, education, risk management, or defense, or managing business relationships.

Women should hold as many positions in cybersecurity as their male counterparts. Encouraging more women to enter the cybersecurity field will only propel the industry forward and help businesses secure the top talent they need to fill today's – and the future's – critical cybersecurity roles.

GIRLS, GIRLS, GIRLS

Girls need to see other women as role models in cybersecurity positions. The reality is that there aren't enough women in tech, so it's good to provide platforms that then give a stage to the women in the

Anna Collard, SVP Content Strategy & Evangelist KnowBe4 Africa

industry that other girls and the younger generation can look up to – even not just the younger ones, but people from outside of our industry can look at and say, "well, if she can do that, I can also do that."

They all know how to use TikTok and WhatsApp as a consumer, but not necessarily how to use technology for good, and particularly from a cybersecurity point of view, what the risks and the threats are. It's a real issue because we have so many users on mobile

GIRLS, GIRLS, GIRLS

devices, and they use it for banking and financial transactions, etc. So, there is a real need and a drive to bring digital literacy to the schools, the colleges, and the universities.

A lot of the girls that I've met in schools here, they haven't even considered cyber as a career choice because they just write it off as something that's maybe too geeky or nerdy – I mean, we do have the geeks, I'm quite a nerd myself – but it's a really fascinating field to get into across so many domains. You can come at it from completely different angles, like, in my case, I didn't study technology. I came from an economics background.

As long as you have an attitude for learning, and an interest, and a curiosity, you'll love this field because you'll never stop learning. I guess that's my message [for young girls] to join us if it sounds interesting.

From a <u>video interview</u> with <u>Anna Collard</u>, SVP Content Strategy & Evangelist at KnowBe4 Africa.

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RESOURCES

BOOK – Women Know Cyber: 100 Fascinating Females Fighting Cybercrime" by Steve Morgan & Di-Freeze. Paperback published by Cybersecurity Ventures, available on Amazon.

DOCUMENTARY.– "Women Know Cyber" produced by Cybersecurity Ventures, based in part on the book. Sponsored by Mastercard. Technology Partner Deloitte Cyber. Training Partner KnowBe4. Watch on the Cybercrime Magazine YouTube Channel.

ASSOCIATIONS – 50+ Women In Cybersecurity Associations and Groups To Follow. Published by Cybersecurity Ventures.

BUSINESSES – List Of Women Owned Cybersecurity Companies In The U.S. And Internationally. Published by Cybersecurity Ventures.

PODCAST – The Cybercrime Radio Podcast features interviews with women in cybersecurity globally.

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KnowBe4 is the world's largest security awareness training and simulated phishing platform that helps you manage the ongoing problem of social engineering.

We are a leader in the Gartner Magic Quadrant and the fastest-growing vendor in this space.

KnowBe4 is proud of the fact that more than 50 percent of our team are women.

To learn more, visit https://knowbe4.com

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WOMEN IN CYBERSECURITY 2022 REPORT is written by <u>Charlie Osborne</u>, Editor-at-Large for Cybercrime Magazine. <u>Steve Morgan</u>, founder of Cybersecurity Ventures, and the editors at Cybercrime Magazine contributed.

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