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Lydia Kostopoulos, KnowBe4, says female mentors are vital in a male-dominated profession.

# Cybersecurity needs more women

*Encouraging more women to pursue careers in cybersecurity is key to helping address the global skills shortage and fill the millions of unfilled positions.*

 Kirsten Doyle

**T**he lack of female representation has a snowball effect by driving unequal pay as well as an absence of support for women in the industry.

According to Dr Lydia Kostopoulos, SVP emerging tech insights at KnowBe4, the (ISC)<sup>2</sup> 'Cybersecurity Workforce Study: Women in Cybersecurity' report revealed that women currently represent around 24% of the cybersecurity workforce. Cybersecurity Ventures said women held 25% of cybersecurity jobs globally in 2021, up from 20% in 2019, and around 10% in 2013. And, accord-

ing to another study by Cybersecurity Ventures, women filled 17% of Fortune 500 CISO positions in 2021 (85 out of 500 companies).

So why are women so disproportionately represented? "There are many factors involved in the lack of representation of women, and particularly of minority women," says Kostopoulos. "There are elements of discrimination and unconscious bias that continue to be at play. However, there are also structural and social constraints that are holding women back and those start at a young age. From gendered toys, to gendered language

and gendered expectations, girls grow up encouraged to be and pursue different goals than boys. In college, you'll find many young female students enter computer science and computer engineering fields – in fact, in some of the top universities, half the population of cybersecurity undergraduates is female. However, the important question to ask is, how many graduate?"

The answer: far fewer than entered. Many who leave say they feel it's not for them, or they have other interests, but some claim that the culture of these environments favour men, which is discouraging to women. Female mentors and teachers are instrumental in helping change male-dominated environments and cultures. Beyond education, women who enter cybersecurity workforces still have to contend with predominantly male environments and workplace policies that are unfavourable to women, such as those who wish to become mothers, she says.

Irrespective of the field, the gender disparity where women seem to drop off the career ladder is when they have their first child, says Kostopoulos. "Some organisations offer maternity leave, but not paternity leave, so mothers shoulder the care of the newborn. Some women fear that if they take the full maternity leave, they will lose their job or won't be taken seriously. Others find that when they return, their responsibilities have been delegated to others."

She says another factor is what happens outside the workplace. Many women are expected to take on more of the home workload, from scheduling doctors' appointments to cooking to doing homework with the kids and putting them to bed.

Then, in the workplace, sexual harassment (verbal or physical), including intimidation and bullying, are also factors forcing women to leave. This affects mental health and career progression, and some find that it's just not worth staying.

### Retaining talent

Another reason women leave is because despite their qualifications, they are assigned to do the boring and tedious paper-based 'housework' of the office and not the important tasks that would help them advance their career.

"I know countless women who have years



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**Lydia Kostopoulos, KnowBe4**

of experience, but not the experience needed to advance because they've been sidelined. Leaving such roles is critical to career progression and more often than not, people will search for environments where they see their gender represented. Diverse environments attract diversity.

“There are countless invisible factors at play and there's no one thing to explain why women are disproportionately represented not just in the field of cybersecurity, but in all workplaces. This is why we see the rise of diversity and inclusion taking centre stage because businesses understand that it's not enough to attract talent; retaining it to help the business grow and thrive is the hard part that needs to be a top priority.”

Speaking of what can be done to encourage more women to take up careers in cybersecurity, Kostopoulos says there are many initiatives for girls to learn about cybersecurity and a range of universities that make efforts to attract female students to the field of science. There are also countless professional organisations and initiatives for women in the field of cybersecurity, all of which encourage women to take up careers in this area. But the important question is not how do we encourage more women to take up careers in cybersecurity, but how do we retain women who enter these fields? And, equally important, how do we provide a space for them to flourish?

She believes CEOs at every organisation need to be involved in these questions. “It's

about organisational culture that understands what discrimination is, what unconscious bias looks like and learns about the invisible barriers that women must overcome. Workplace education on harassment and discrimination is a helpful start, but I would advocate for expanding this education to include education on unconscious bias, #EverydaySexism and the challenges women (particularly mothers) face. This will help contribute to a culture of understanding and create a working environment where everyone is aware of these issues. I am a big believer in awareness. It's the first step towards any meaningful change.

“Besides our reproductive differences, there are different gender norms and expectations around the world. Women have been raised differently, in a man's world. As Reshma Saujani, the founder of Girls Who Code, argues in her TED talk, we need to 'teach girls bravery, not perfection'. Years later, in adulthood, many women I know hold off on sharing ideas or pursuing their dreams because they don't think the idea, or they, are good enough. This holds so many women back because they think they need to be perfect. However, one of the skills this creates in girls and women is competence. Growing up as the underdog socialised to be 'perfect' creates a tremendous amount of drive and motivation to succeed. Women have been socialised to be more collaborative, which is an important skill to have in the workplace as collaboration

is a key element in a company's success.”

Diversity of ideas, experiences and perspectives is the driver of innovation, she says. “If businesses today want to harness the talent of the market, they need to make sure their company is a great place in which to work. Female talent is a big part of the market and businesses have an important role to play in creating professional environments where women feel welcome, safe and appreciated. **D**”

**>> (ISC)<sup>2</sup> CYBERSECURITY WORKFORCE STUDY: WOMEN IN CYBERSECURITY**

Even though men outnumber women in cybersecurity by three to one, more women are joining the field – and they are gunning for leadership positions. Buoyed by higher levels of education and more certifications than their male counterparts, female cybersecurity workers are asserting themselves in the profession.

While 44% of men in cybersecurity hold a post-graduate degree, the number of women is 52%.

Nearly half of female cybersecurity professionals surveyed are millennials – 45% compared to 33% of men.

By contrast, Generation X men make up a bigger percentage of the workforce (44%) than women (25%).

Women working in cybersecurity currently account for about one quarter (24%) of the overall workforce.

This is a significantly higher finding than from 2017, when only 11% of study respondents were women.



**FEMALE REPRESENTATION IN NUMBERS**

- Women held 25% of cybersecurity jobs globally in 2021, up from 20% in 2019, and around 10% in 2013.
- Women filled 17% of Fortune 500 CISO positions in 2021 (85 out of 500 companies).
- Women will represent 30% of the global cybersecurity workforce by 2025, and that will reach 35% by 2031.