CyberFirst podcasts
*'How cyber security supports our world' transcript*

00:00 **Anne Marie** – We live in a digital world, and technology is everywhere. Not just in our phones or our laptops, but in the technology that protects everything from banks to hospitals to airports, so how do we protect our world. Well, through cyber security. In this episode of our podcast, brought to you by CyberFirst we'll talk about this question, just why is cyber security so important? From its impact on the nation, to its value for our industry members, we will also talk about why it's essential to the UK, not just now but also in the future.

I'm Anne Marie from the Stemettes, and I'm joined by…

00:36 **Emma** – I'm Emma, I work in the comms team at the National Cyber Security Centre, part of GCHQ.

00:40 **Amy** – I'm Amy, former GCHQ apprentice and I work within the CyberFirst team.

00:43 **Michala** – I'm Michala, I lead cyber security at Marie Curie, we're the UK's leading end of life healthcare charity, and we are also one of CyberFirst's industry members.

00:54 **Anne Marie** – And additionally, I'm joined by Ethan and Olivia who are two of CyberFirst's current bursary recipients.

01:00 **Ethan** - Hi, I'm Ethan and I study computer science at university, I'm currently doing a year-long placement that was organised through the CyberFirst bursary scheme.

01:06 **Olivia** – Hello, I'm Olivia, I'm graduating university with a chemistry degree this summer and I have secured a graduate role through the CyberFirst bursary scheme.

01:10 **Anne Marie** – We want to get more young people into cyber security, but why? Because cyber security supports all aspects of our daily lives, so as a quick-fire round, I'm going to name services and institutions that we come into contact with every day, and our guests will quickly tell me some examples of how cyber security protects that industry. So, banks?

01:31 **Olivia** – Identity management.

01:32 **Anne Marie** – Hospitals?

01:33 **Emma** – Making sure that hospital staff can access patient records when they need to and that no one else can.

01:38 **Anne Marie** – Emergency services?

01:39 **Ethan** – Making sure that the emergency service network is up and running so that people can the help they need when they need it and no later.

01:47 **Anne Marie** – News sources?

01:48 **Michala** – Protecting journalists from nation state governments so that they can report on things they want to keep quiet.

01:55 **Anne Marie**- Social media?

01:56 **Ethan** – Making sure your account credentials are under lock and key, and you don't wake up one day to find you've got 50 posts from your account from someone else.

02:04 **Anne Marie** – Armed forces?

02:05 **Michala** – Making sure that troops aren't running around wearing their Garmin smart watch that's revealing their location on the internet.

02:15 **Anne Marie** – Schools?

02:16 **Emma** – Protecting younger people, so making sure that remote learning can take place in remote ways so that other people can't hack into school Zoom sessions and things like that.

02:25 **Anne Marie** – pharmaceuticals?

02:25 **Emma** – making sure that people's health records remain private, and that any medication people require will be the ones that they get and vice versa, that people can't get medication that isn't for them.

02:38 **Anne Marie** – power supplies?

02:39 **Olivia** - Again making sure that the service is available to those that need it.

02:44 **Anne Marie** – cyber security touches all sorts of industries in ways you wouldn't think of at first, that's why there are so many industry members you can work with on the CyberFirst university bursary programme. Michala, as a representative for Marie Curie, can you tell us about all the different ways cyber security protects charities like yours?

03:02 **Michala** – The crown jewel for us is really our patient data, that is what we do as a charity fundamentally, and the access to the medical records at the time they need it for the clinicians is crucial, so they play a part there. Also, our supporter data, we could not deliver all the services we do without all the people who raise money for us. So, making sure things like our digital platforms where they donate money are protected from cyber criminals, people who might commit identify fraud and theft, that sort of thing is crucial. Also, we've got to make sure that we protect the data of our staff and volunteers as well, there's quite a lot of sensitive information there. What might surprise people is we also have a research

arm, so there is the intellectual property there to be protected, that also helps with our funding. We have a gambling license for example and making sure that that's done in a cyber secure way is really vital to ensure income for the charity. So, there are lots of ways we help.

04:09 **Anne Marie** – People often think that cyber security is a recent fad, as something that isn't necessarily a stable career, but in fact the more our society uses technology to store our personal information to analyse data and make decisions on our behaviours, the more the need for cyber security grows. Emma, can you talk to us about the increasing need for cyber security and why its impact will only grow in the future?

04:32 **Emma** – As you've highlighted, more and more of our lives are now being lives online, we are now doing more in our lives that involves technology in fundamental and irreversible ways. If we are doing stuff online then cyber security goes hand in hand with that, because cyber security supports privacy which is increasingly important to many people. In the UK now you are seeing tons and tons of crucial government services being delivered online, in the last century if you wanted to renew your passport or driving license or get your car MOT'd then there was no process for that. And now it is all online, that's the way things are delivered. Cyber security is crucial to all these things, and to industries that are primarily online, like shopping, online retail. It is crucial for the UK's resilience and our prosperity.

05:25 **Anne Marie** – What does that mean for the careers of bursary graduates and degree apprentices, in terms of progression and paths they could take?

05:27 **Emma** – I think this means the number of jobs available in the industry is likely to grow and grow, I hope there's going to be an increase in diversity in types of jobs. We've talked about the huge diversity there is already, which from my perspective is an increasing recognition of the fact that people are crucial for security. So, we need an increasing focus on people as part of the security system. The 'socio-technical system' as we call it at the NCSC when we're feeling fancy. So, I would like to see a focus on people-based roles, looking at how people interact with technology and how we can support all those people on making better decisions, and in protecting their stuff online. So, I think it will create more jobs and more diversity of roles, so an ever-increasing chance to find something that really interests you and which you find really rewarding.

06:15 **Anne Marie** – It definitely means there is going to be a lot of growth as you were saying, in diversity but also in scale and in size, it's a hugely exciting time to join the industry. Emma from the NCSC and Michala from Marie Curie, what would you say are some areas to be aware of in the future, that could have a big impact on society?

06:33 **Emma** – I think at this point it's probably obligatory to mention artificial intelligence which is a bit of a buzz word across all areas of technology, it's still relatively young, we are still figuring out the implications and applications of these technologies, and of course they are growing all the time. I think it's going to be fascinating to see how those types of technologies are used, and whether they are used to support societal good or not.

**06:57 Michala** – That was actually the first thing on my list as well, it shows how important it is in terms of what is up and coming, I'll extend that slightly and say artificial intelligence combined with robotics and cybernetics in the healthcare sector and what that could potentially mean for the world going forward.

**07:18 Anne Marie** – Ethan, Olivia and Amy, as current bursary recipients and a former apprentice, knowing the potential of the industry, where do you see yourselves in the future? What are your ambitions?

**07:31 Amy** – Having recently joined CyberFirst in an outreach and events-based role, that is something that I really enjoy, my previous role was quite technically focused, and were really interesting. But there is something that really inspires me about giving back to new people joining the organisation and potential joiners in school children and university students and so I can see myself doing that for quite a long time in the future.

**08:03 Ethan** – I hate these types of questions, I'd say I don't ever really plan more than a year ahead in my life but I know at some point in the future I'd like to take on a project manager or team lead role, I really enjoy working with people and hopefully by that time I will have built up a lot of technical and non-technical abilities that I could use to help and make sure everyone works together, and understand every part of a project instead of just telling people what to do. But I would say for people who are worrying about 'if I join the scheme now, where will I be in 5-10 years' time?' just focus on what you are doing at the moment, whether that is A-Levels, university or you're applying for jobs, or applying for the bursary scheme, I've still got a year of uni left so that's on my list of things to do. When I'm in a job, I'm going to be focusing on that and looking occasionally when I'm not working on what I'd like to do next but that question of 'where do you see yourself in 5 years? 10 years?' I'd be the typical cop-out answer of saying '5 years older' or something like that. I don't want people to stress about it, because things will happen naturally. As long as you're interested in something and are active and looking, things will work out for you. Don't come to me if that advice doesn't work!

**09:21 Olivia** – Yeah, I agree with Ethan, I've always had a thing for project management but also on the analytical side as well, threat intelligence and the forensic investigative side of risk and things like that. But also, within the 5 years I'd like to gain some professional qualifications for instance CISSP, if you want to go and look that up, but also potentially a master's in cyber security. There are all sorts of things you could do, but those are probably my ambitions.

**10:05 Anne Marie** – The opportunities are endless, and you've got so much time to explore them, so thank you very much for sharing those ambitions with us! So, there we have it, impact across society, pride in protecting every corner of the nation and the potential that comes with being part of this constantly growing sector that is going to become so important in the future. If you are ready to be part of that as a future cyber security specialist, then do take a look at https://cyberfirstcareers.co.uk to find out more about the CyberFirst degree apprenticeship and university bursary programmes. And in this final podcast episode, as always thanks to our fantastic guests and thanks to you for listening as we open up the world of cyber security.