



AD: Podcasting monthly from the shores of the Delaware River in Trenton, New Jersey, this is Tech NJ, powered by NJOIT - the New Jersey office of Information Technology.

KS: Hi! My name is Kelly Silverstein, and I'll be your guest host for today's podcast. Women in tech - well, there aren't that many of them to be honest... can you name ten female scientist? How about just five? According to a recent study in the UK, 1 in 4 people couldn't even name one. After peaking in 1991 at 36%, the rate of women in computing roles has been in steady decline. The percentage of tech employees who are female lags far behind other fields, including business, law and medicine. And here we have someone in both law and tech.

CP: Here's Carrie Parikh - COO and Chief Data and Privacy Officer for the State of New Jersey, discussing her thoughts on being a woman in the male-dominated field of technology.

CSP: It's pretty great to have a career where every day you're excited to get up and go to work, and I can tell you for years of being a lawyer in a law firm, maybe it wasn't quite the same back then. But there still a ton of challenges. Oftentimes, I'm the only woman in the room - it can be lonely. Sometimes there's a presumption that because I'm a woman, or because I didn't start out in tech, that I don't belong. I'm not supposed to be here. But I don't let that get me down - instead, that's my fuel. Women in the tech industry not unlike a whole lot of other male-dominated industries constantly have to prove ourselves. It's unfortunate, but boy... when we have proven ourselves, we are a force to be reckoned with, and watch out - because I think eventually you'll see us take over in the tech field.

KS: Currently, women hold 25% of computing jobs, and women hold only 11% of executive positions at Silicon Valley.

CSP: And the numbers are even lower when considering women of color. For example, Latinas and Black women only 1% and 3% of these jobs - that's almost statistically insignificant. Even fewer women are found in software development, technology leadership, or the other kinds of key roles that have a significant influence on future innovation. We cannot leave women and minorities out when we're talking about modernization and innovation in technology.

KS: There are reasons for optimism among the sea of distressing statistics - with the rise of popularity of programs encouraging STEAM education, and groups like "Girls Who Code" that offer opportunities for girls and spark their interest in this field.

CP: Here's Chris Rein, Chief Technology Officer for the State of New Jersey, citing several groups aimed at encouraging young girls to get involved in technology.

CR: Some of the more recent initiatives that we've been part of, and it's been really exciting, is for example the Girls Go CyberStart that Homeland Security, OIT, and the NJCCIC was quite active with. It was so exciting to see some young talent. These young women from high schools across New Jersey did so well - I think three place within the top 50 of our nation, and we had a very exciting ceremony honoring them, so this cyber security field in particular is one that really wants to draw in talented women.

CP: Here's Elizabeth Caldwell, Chief Customer Success Advocate for the State of New Jersey Office of Information Technology, expanding on these organizations.

EC: IT-related jobs are expected to grow in the future. We don't see any stop- if you think about it, just about everything has an IT component with it. Therefore, there's going to be more opportunities, and yet we see in the US there's a shortage of skills to fill those opportunities. What's being sought out most are interpersonal and tech-related skills. This is a great opportunity to get our young women, whether minorities or others, involved in this field. We should start young, like many programs that are out there - Girls That Code... we should involve them earlier on. I was reading a book recently, and the author stated in order to graduate high school, she had to be able to pass a swimming test. But yet we have no curriculum to have computer science there. Another thing is that, reviewing a recent report from NASCIO, and they talked about the government workforce, and it said some of the hardest positions to fill are IT. As a matter of fact, IT-related jobs were in the top four, right behind nursing. This trend is expected to continue, therefore there are great opportunities for women and minorities to get involved into the tech field.

CSP: Organizations like that are super important. They're doing everything they can to close the gender and race gaps in technology. The sooner we teach young girls and women tech skills, the sooner they can make waves in the industry. Everyone should go check out those organizations, and get involved if you can, and there are New Jersey chapters for both I believe.

KS: Whether you're looking at startup founders, investors, or people in computing and technical roles, women often find themselves in rooms full of men.

CP: Next we have Debbie Baliotti, Team Leader for Apex Development and Administration for NJOIT, talking about her experience being a woman in the tech world.

DB: I really like programming and computers from when I was in high school. I mean, I actually programmed on a machine where you had to feed a tape into it, and the computer was actually miles away at a community college, and it interpreted the code that we fed in by tape. So I... that was my first programming, and I liked it, but actually I went into another career choice. The first one I went to college, and came back to computers later when I found out the

choice I had made didn't really pay that well. At the time, I was working for another company, private industry, and I was helping with the creation of a computerized reservation system for meetings, and we did it all by paper. And I said, "Why aren't we doing this by computer?", and so we wrote software to do it in Pascal and, you know, we did that. But while I was doing that, the person, the consultant we had in said, "Why aren't you working computers? You're a natural for it.", and he says, "Plus it pays good.". And that's the part I heard - I heard, "Pays good.", sounded really good to me. So, I went back to school and got a second degree in computers. It was predominantly male, I mean, well I took courses in college, for example, I was the only woman in class of 50 learning electrical engineering. So, a lot of times, the teacher would want to make male jokes that I guess you can't say in front of women and he have to catch himself before he said them in front of me. But nowadays, I see much more women in IT, and it is a great career to have. Not only does it, you know, make money, but it actually is very interesting and varied, and there is a lot of exciting things going on. A lot of people think that you have to be a math whiz to work in computers and you don't. You have to really be more of a logical thinker, you know, an orderly thinker about how things should go. And you wanna have to help people because I think that's really important. The whole point of software is to help people do something easier or faster or more organized, and that's what we sometimes forget. You know, people are like, "Oh, I have to write another program for those people...", it's like no - you have to help them do something, and I like to help people.

CP: Returning to Tech NJ is Poonam Soans, Director of Application Development for NJOIT, describing her experience as a woman working for the New Jersey Office of Information Technology.

PS: My personal experience at the Office of Information Technology has been that women are treated the same as all men are treated. I believe your career path is based on your performance. Passion for work is a critical element of success. It is a virtually unstoppable force that generates energy, creativity and productivity. When you love what you do, it is difficult not to succeed, so I really enjoy working in technology.

CP: I would never be able to do what you've done...

PS: Why? It's really easy and it's fun! I'm telling you - so many people from different teams ask to work on my team because it's so much fun. I mean, the geeky people who like this kind of stuff... (laughs)

KS: In a study by Stanford Professor Raj Chetty, research confirms that if girls were exposed to female inventors as boys are to male inventors, female Innovation rates would rise by 164%, and the gender gap in innovation would fall by 55%.

CP: Former guest and friend to the podcast, Krista Mazzeo, Senior Cyber Threat Intelligence Analyst for the New Jersey Office of Homeland Security and Preparedness, shares how she got her start in technology.

KM: I had decided several years ago to kind of change career paths. I have a background in English and Communications, I have a background in commercial radio as well as college radio. Well I realized that wasn't going to pay too well moving forward, so I needed a better career path. I decided to pursue a Masters in Cybersecurity, because I knew at that point cybersecurity was going to be a very big thing very fast. Within the IT world, certifications are key. There aren't a whole lot of degree programs that employers focus on, and although I did want to get my masters, I wanted something else to kind of boost myself and improve my knowledge. So I had heard of the certified ethical hacking certification which was relatively new, and I took a chance and I thought, "That sounds like fun". So I signed up for a boot camp course out in Seattle, week long, took vacation from the job I was working at the time went out there, and just studied, studied, studied, studied, studied. Passed the course, got the certification, and before long I was starting to see it on job postings, as not so much a requirement but something preferred. The reason being is that certified ethical hackers have to work within specific parameters. It's beneficial for companies and organizations to find vulnerabilities in their networks and systems before the bad guys do, but it takes a lot of time, energy, resources and knowledge that your standard IT administrators don't have, and specifically with time. This is where you have ethical hacking, penetration testing, that's where that comes into play. And that way you can either bring in a consulting firm, and they'll test your systems and networks, see if there are open ports, see if there are vulnerabilities in your web applications, in your website... anything that hackers can use against you to get into your networks. So I decided that that sounded like an exciting career path.

CP: What advice would you give a young girl or woman deciding to make a tech career for themselves?

PS: I would tell them that it is very fulfilling and also very challenging, and I wish I had taken computer science in school, as I really enjoy what I do.

CSP: The first thing I would say is that math, science, technology, engineering... don't be afraid of those things girls - they're not exclusively for boys. Dolls and princesses are fantastic, but so are Legos, and taking things apart, and putting them back together. And, most importantly, just because you never seen someone that looks like you doing something, doesn't mean you can't do it. There are no boy jobs, there are no girl jobs, if you want to try it and become good at it, go for it. Honestly, I wish someone had told me that when I was younger. Women are often filled with self-doubt. I'm not saying that this is unique to women, but it does seem more prominent. If we teach our girls that was hard work, grit, and determination they can do anything, I think we will see more girls taking on bigger challenges earlier and more often.

EC: If someone was to ask me what my recommendation would be, I would say, on a global scale, we really need to make computer science a part of curriculum at a very early age. I know here in New Jersey, our Governor is committed to expanding a STEM education earlier on. Another recommendation that I would have is to get involved with one of the Girls That Code

initiatives. There are various programs around the country that you can actually get involved in, and you can Google - there are many programs that support getting more women and minorities into IT. So, if you don't like one, there's a whoooooole lot that you can pick and choose from. I would also suggest that if you're already established in your career, that you would reach out and mentor someone else that's new in their career as well, and even volunteer to do speeches and talk with youth groups to encourage the younger ones to get involved in this field.

KS: I would give the same advice to people in technology as people not in technology - do what you love, and love what you do. If you love technology, get into it, put your heart into it like you put your heart into your family, your pets, your outside interest. That will make any career fulfilling, whether it's in technology outside of technology.

CP: Join us next time as we explore the importance of customer service excellence here on TechNJ. Email us at podcast@tech.nj.gov, check out OIT's website at tech.nj.gov, and follow us on Twitter at NJOIT.

KS: My name is Kelly Silverstein...

CP: ...I'm Craig Parker, have a great day.